The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. LX, NO. 12 CHICAGO, ILLINOIS MARCH 22, 1913

STERILIZATION, BOILING AND PASTEURIZATION OF MILK

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The term, "sterilization," should never be applied to the processes used in the preparation of milk for the feeding of infants, because the milk is never rendered bacteriologically sterile by them. The term, "pasteurization," as it is ordinarily used, is indefinite and misleading. It should always be stated at what temperature the milk is heated and how long it is kept at this temperature; otherwise, it means nothing.

THE CHANGES PRODUCED IN MILK BY HEAT

Appearance, Taste and Smell.—A well-marked scum, or pellicle, develops on the surface of boiled milk. This may begin to develop at as low a temperature as 122 F. (50 C.) (Pfaundler and Schlossmann).[1] This is due to the disassociation of the casein compounds as the result of drying. Its composition is:

Fatty matter	45.42 per cent.
Casein and albuminoid	50.86 per cent.
Ash	3.72 per cent. (Rosenau).[2]

Changes in the taste and smell may develop at as low a temperature as 158 F. (70 C.) (Sommerfeld),[3] but are usually not marked unless the milk is brought nearly to the boiling point. Prolonged boiling changes the color toward brown, the amount of change depending on the duration of the boiling. The change in color is due to the caramelization of the sugar. Heating at 150 F. (65 C.), or over, for half an hour, materially delays or entirely prevents the rising of cream. This is because the normal agglutination of the fat droplets is broken down and they are more homogeneously distributed throughout the fluid (Rosenau).[2]

Composition.—When milk is boiled there is a partial fixation of the calcium salts, which are probably precipitated in the form of tricalcium phosphate (Kastle and Roberts).[4] There is also a precipitation of the magnesium salts (Rosenau).[2] There is a diminution in the amount of organic and an increase in that of inorganic phosphorus (Rosenau). About one-third of the citric acid is precipitated in the form of tricalcium citrate (Pfaundler and Schlossmann).[1] About 90 per cent. of the carbon dioxid and 50 per cent. of the oxygen and nitrogen are also driven off (Pfaundler and Schlossmann). There is also a certain amount of decomposition of the compounds of casein into casein and its base. The casein is rendered less easy of coagulation by rennin and is more slowly and imperfectly acted on by pepsin and pancreatin (Rosenau). It is difficult to understand why this is so, because the precipitation of the soluble albumins, which act as protective colloids (Alexander and Bullowa),[5] by boiling, should, make the coagulation of the casein easier. The curd produced by the action of acids (Pfaundler and Schlossmann) and rennin (Rosenau) is, moreover, softer and more flocculent than that in raw milk. The soluble albumins are entirely precipitated (Sommerfeld).[3]

There are no available data as to the temperature at which the changes which take place in boiled milk first appear, except in the case of the soluble albumins. Sommerfeld quotes Steward to the effect that heating at 149 F. (65 C.) for thirty minutes diminishes them, and that thirty minutes at 176 F. (80 C.) completely destroys them. Schlossmann[6] found a slight diminution in the solubility of the albumins at 158 F. (69 C.) and Solomin[7] states that there is an "apparent" beginning of clotting of milk albumin by heating at 140 F. (60 C.) for fifteen minutes, but he is not sure whether or not it is really the lactalbumin which is involved. It is not far wrong to conclude, therefore, with Hippius,[8] that the heating of milk at 149 F. (65 C.) for thirty minutes causes no noteworthy changes in the chemical composition of the milk.

Ferments.—According to Hippius,[8] the proteolytic ferment of cow's milk is unchanged by heating for one hour at 140 F. (60 C.) or for one-half hour at 149 F. (65 C.), but is destroyed by boiling, while the oxidizing ferment is unchanged by heating, even for several hours, at from 140 F. (60 C.) to 149 F. (65 C.), but is destroyed by one hour at 169 F. (76 C.). Kastle and Porch[9] have shown, moreover, that the peroxidases are somewhat increased by heating at 140 F. (60 C.).

Bactericidal Action.—The bactericidal power of milk is still considerable after continued exposure to temperatures of from 140 F. (60 C.) to 149 F. (65 C.), but is destroyed by boiling (Hippius). The alexins are affected in the same way (Von Behring).[10]

Precipitin Reaction.—The heating of milk, even for one hour at 248 F. (120 C.) in the autoclave, does not diminish the precipitin reaction (Hippius).

1. Pfaundler and Schlossmann: The Diseases of Children, 1908, I, 303.
2. Rosenau: Bulletin 56, Hyg. Lab., Pub. Health Service, 1909; Circular 153, U. S. Dept. Agric., Bureau of Animal Industry, 1910.
3. Sommerfeld: Handbuch der Milchkunde, J. F. Bergman, Wiesbaden, 1909.
4. Kastle and Roberts: Bulletin 56, Hyg. Lab., Pub. Health Service, 1909.
5. Alexander and Bullowa: Arch. Pediat., 1910, xxvii, 18.
6. Schlossmann: Ztschr. f. physiol. Chem., 1896-7, xxii, 197.
7. Solomin: Arch. f. Hyg., 1897, xxviii, 43.
8. Hippius: Jahrb. f. Kinderheilk., 1905, lxi, 365.
9. Kastle and Porch: Jour. Biol. Chem., 1908, iv, 301.
10. Von Behring: Therap. d. Gegenw., 1904, N. F., vi, 1.

Bacteria and Their Products.—It has been proved by many investigators that the typhoid bacillus, the diphtheria bacillus, the dysentery bacillus and the cholera vibrio, as well as the other pathogenic non-spore-bearing organisms most often found in milk, are destroyed in milk by heating at 140 F. (60 C.) for twenty minutes (Rosenau) and at higher temperatures for shorter lengths of time. Butyric acid bacteria are destroyed at from 212 F. to 216 F. (100 C. to 102.2 C.) for from one to two minutes (Sommerfeld). The spores of the peptonizing bacteria are much more resistant, however, some of them withstanding boiling for one hour (Sommerfeld).

Since the investigations of Flügge,[11] in 1894, who found spore-bearing peptonizing bacteria developing in milk heated at 158 F. (70 C.) for thirty minutes and forming highly toxic substances therein, it has been very generally believed that the destruction of the lactic acid bacteria by pasteurization resulted in the unhindered growth of undesirable, proteolytic bacteria, which produced toxins and other poisonous products, and that pasteurized milk putrefied rather than soured. It has also been supposed that bacteria multiply more rapidly in pasteurized than in raw milk. Ayers and Johnson[12] recently found, however, that many acid-forming bacteria are not destroyed below 168 F. (75.6 C.) and that, in consequence, pasteurized milk turns sour in the same way as raw milk, although the process is somewhat delayed. They found that there were fewer peptonizing bacteria in pasteurized than in raw milk and that they did not multiply rapidly. The numerical relations of the acid-forming bacteria, the peptonizing (putrefactive) bacteria and the inert bacteria were practically the same as in clean, raw milk, and the acid development in an efficiently pasteurized milk was about the same as in clean, raw milk. They also found that the rate of multiplication of bacteria depended on the number of bacteria present in the milk. The rapidity of multiplication was the same in pasteurized as in raw milk containing the same number of bacteria and more rapid in both than in dirty milk.

It is generally believed that the heating of milk, even to boiling, has no effect on the toxic products of bacterial growth which it may contain. This belief is in part justified and in part unwarranted. The true bacterial toxins are thermolabile, many of them being rendered inert at 140 F. (60 C.). Bacterial endotoxins may be very resistant, however, that of the *B. coli communis* being, for example, unaffected by fifteen minutes at 272 F. (134 C.). There is no doubt that the spore-bearing organisms can set up putrefactive and proteolytic changes in milk and produce poisons as the result. The nature of these poisons is not known. Their connection with "milk poisoning" has been inferred, not demonstrated. Moreover, as far as is known, the true bacterial toxins play but little, if any, rôle in milk poisoning (Rosenau).

THE EFFECTS OF THE HEATING OF MILK ON ITS DIGESTIBILITY AND ON ITS VALUE AS A FOOD FOR INFANTS

Experiments in Artificial Digestion.—The evidence derived from artificial digestion experiments as to the comparative digestibility of boiled or sterilized and raw milk is inconclusive; there is little or none as to that of pasteurized and raw milk. The casein is rendered less easy of coagulation by rennin, but the curd produced by the action of acids (Pfaundler and Schlossmann) and rennin (Rosenau) is softer and more flocculent than that in raw milk. De Jager[13] concluded that raw milk was the more easily digested, while Fleischmann[14] decided that sterilized milk was more easily acted on by the digestive ferments than raw milk. Jemma[15] and Michael[16] found that sterilization did not impair the digestibility of milk.

Animal Experiments.—Almost all experiments agree in showing that all animals do better when fed on the raw than on the cooked milk of their own species. Von Brünning[17] has collected reports of experiments on feeding animals with the raw and cooked milk of another animal. The results were the same in all, namely, that, when fed on the milk of another animal, the young animals did better when the milk was cooked than when it was raw. Raudnitz[18] fed dogs on raw and on sterilized milk and found that the fat and nitrogen were better utilized with the raw than with the sterilized milk.

Experiments on Babies.—Finkelstein[19] fed six babies with raw and with cooked human milk. He gives no data as to these experiments, but states that the babies did not do nearly so well on the cooked milk. He also quotes Moro as having shown that the results with cooked human milk are not so good as those with raw human milk. It is evident, therefore, that babies react to the heating of the milk of their own species in the same way as other young animals.

Very few metabolism experiments have been done in babies as to the relative utilization of raw and cooked cow's milk and these are incomplete and fragmentary. They show, however, little difference in the results with the two foods. Müller and Cronheim[20] found that the calcium was less well utilized when the milk was cooked, but Finkelstein says that their methods are open to criticism. Krasnogorsky,[21] on the other hand, states that the iron is better utilized from cooked than from raw milk.

It has been generally believed in this country until very recently that babies fed continuously on cooked milk do not thrive so well as those fed on raw milk and that the cooking of milk predisposes to the development of the diseases of nutrition, while physicians in Europe have believed that babies thrive as well, or perhaps better, on cooked than on raw milk. There is, however, relatively little evidence on either side. Finkelstein[19] studied sixty well and fifty-three sick babies and concluded that there was no evident difference in the results with raw and with cooked milk and that neither the gain of the healthy nor the healing of the sick was visibly aided by raw milk. He quotes Czerny as having obtained the same results and states on the authority of an oral communication that the experiment of feeding raw and cooked milk to large series of babies had been tried for three years at the Waisenhaus in Stockholm and that no difference in the results from the two methods had been noted. Variot[22] states that during the twelve years ending in 1904 more than 3,000 infants were fed at the dispensary of the *goutte de lait* of Belleville with milk heated at 226 F. (108 C.) and that rachitis did not

11. Flügge: Ztschr. f. Hyg., 1894, xvii, 272.
12. Ayers and Joanson: Bulletin 126, U. S. Dept. Agric., Bureau of Animal Industry.
13. De Jager: Centralbl. f. d. med. Wissensch., 1896, xxxiv, 145.
14. Fleischmann: Quoted by Doane and Price, Bulletin 77 of the Maryland Agricultural Experiment Station, 1901.
15. Jemma: Dietet. and Hyg. Gaz., 1900, xvi, 83.
16. Michael: Hyg. Rundschau, 1899, ix, 200.
17. Von Brünning: Quoted by Finkelstein. See Footnote 19.
18. Raudnitz: Ztschr. f. physiol Chem., 1899, xiv, 1.
19. Finkelstein: Therap. Monatsh., 1907, xxi, 508.
20. Müller and Cronheim: Therap. Monatsh., 1903, xvii, 340.
21. Krasnogorsky: Jahrb. f. Kinderheilk., 1906, lxiv, 651.
22. Variot: Compt. rend. Acad. d. sc., 1904, cxxxix, 1092.

develop in any, but that anemia was not uncommon. Scurvy is not mentioned. Carel[23] states that of 210 infants belonging to the laboring class of Paris fed on raw milk, 31.8 per cent. developed rickets, while of 373 infants of the same class fed on cooked milk only 15 per cent. developed rickets and none scurvy. Sill[24] of New York reports, on the other hand, that he found signs of rickets or scurvy in 97 per cent. of 179 consecutive cases of infants fed on pasteurized or sterilized milk. The statistics of the French observers are open to considerable doubt, however, because, unless the French infants of the hospital class are very different from the American, 80 per cent. of them show signs of rickets, no matter on what they are fed, while scurvy was not sufficiently well known in France at that time to be recognized unless of a most extreme type.

It is very difficult to determine what influence the heating of milk, at whatever temperature, has on the development of rickets, because the exact etiology of rickets is at present so obscure. It is probable that heredity, improper hygienic surroundings and improper food all play a part in its production. It is extremely difficult to know in an individual case which is the most important element and almost impossible to determine it in large series of cases. Our present statistics as to the relative frequency of rachitis in those fed on heated and those fed on raw milk are not accurate enough to form the basis of any definite conclusions on this point, because they do not give any accurate data as to the other possible etiologic conditions.

The evidence to prove that the heating of milk produces scurvy is stronger than in the case of rickets, but not at all conclusive, this evidence being the fact that all large series of cases of scurvy show that a considerable proportion of the patients were fed on heated milk, more of them, however, on sterilized, boiled or scalded, than on pasteurized milk. It is impossible to prove, however, that it was the heating of the milk and not the composition of the food which caused the scurvy in these babies. It is evident that when an individual baby is fed on a heated, modified milk it is impossible to know, if scurvy develops, whether it is due in the special case to the heating or to the composition of the milk. It can be only a matter of opinion. A decision can be reached only by the analysis of large series of cases. It may even then be difficult, as is shown by the fact that the series collected by the American Pediatric Society, the largest single series on record, is quoted both for and against the etiologic influence of the heating of milk in the production of scurvy. Further evidence against the heating of milk causing scurvy is that scurvy sometimes develops in the breast-fed and in babies fed on raw milk. Still further evidence are Plantenza's[25] observations that, although scurvy developed more frequently in babies fed on heated milk which was not used at once than on raw milk, it did not develop when fresh milk was heated and used at once.

It has been asserted that the cooking of milk "devitalizes" it and thus renders it a less suitable food for infants. It is presumable that what is meant by "devitalization" is the destruction of the ferments. The point at which this occurs has already been given, showing that they are not injured at temperatures below 150 F. (65 C.). There is no proof, however, that the ferments of milk play any part in the digestion and utilization of the milk, the only apparent foundation for the belief that they do being a statement of Marfan[26] in 1901 that "it is probable that the milk ferments act as stimulators and regulators of nutrition, and that they are identical in function with the ferments elaborated by the various tissues and are intended to compensate for the deficiency of the internal secretions of the newborn." This statement is founded entirely on analogies and hypotheses and not on experiments or facts.

Cooking of Milk Advised as a Routine Measure.—The boiling and proper pasteurization of milk destroys the ordinary non-spore-bearing pathogenic microorganisms. The bacterial growth in pasteurized milk is the same as in clean, raw milk. The evidence at present available is insufficient to show whether cooked milk is more or less digestible than raw milk, whether babies thrive on it as well as on raw milk and whether or not it predisposes to the development of the diseases of nutrition. Granting that the cooking of milk does make it somewhat less digestible and that its continued use does predispose to the development of the diseases of nutrition, it is evident, nevertheless, that the disturbances which it causes are slight and insignificant in comparison with the diseases caused by milk contaminated with bacteria. All milk, except the cleanest, should, therefore, be cooked before being used as a food for infants.

Pasteurization.—The higher the temperature at which milk is heated, the greater are the changes in its composition. While it is somewhat problematical how much influence these changes have on the development and well-being of the infant, it is the part of wisdom to avoid them as far as is consistent with the attainment of the object of cooking milk, that is, the destruction of pathogenic microorganisms. Pasteurization is therefore preferable to boiling. The temperature of the pasteurization should be, moreover, as low as is possible. Pasteurization at 140 F. (60 C.) for twenty minutes is efficient; lower temperatures are not. This temperature and time are, therefore, the ideal ones. At this temperature there is no change in the taste, odor or color of the milk, no noteworthy changes in the chemical composition are produced, the ferments and bactericidal action are unaffected and bacterial toxins and non-spore-bearing microorganisms are destroyed.

There are three methods of commercial pasteurization in common use: the flash method, the holding method and pasteurization in the bottle. The flash method consists in momentarily heating the milk to a temperature of approximately 170 F. (76.7 C.) by allowing it to flow in a film over heated metal pipes or coils and then at once chilling it. The holding method consists in heating the milk to between 140 F. (60 C.) and 155 F. (68 C.) and then placing the milk in a receptacle where it is held at approximately this temperature for from twenty minutes to an hour. The flash method has been repeatedly shown to be unreliable and should not be employed. The holding method is not so satisfactory as would at first appear, because, while the destruction of the bacteria in a small quantity of milk by heating it at 140 F. (60 C.) for twenty minutes is simple enough, it is very difficult to heat a large volume of milk to a definite temperature and hold it at that temperature for a given period of time. Schorer and Rosenau[27] have shown that under ordinary commercial conditions the temperatures expected were not attained. In their four experiments, two planned for 140 F. (60 C.) and two for 145 F. (62.7 C.), from 99.4 per cent. to 99.9 per cent. of the bacteria were, nevertheless,

23. Carel: Le lait stérilisé, Thèse de Paris, 1902-3.
24. Sill: Med. Rec., New York, 1902, lxii, 1016.
25. Plantenza: Arch. f. Kinderheilk., 1912, lviii, 155.
26. Marfan: Presse Méd., 1901, ix, 13.
27. Schorer and Rosenau: Jour. Med. Res., 1912, xxvi, 127.

destroyed. A certain number of pathogenic microorganisms, however, survived. They conclude, therefore, that in order to be safe, pasteurization under commercial conditions should be at 145 F. (62.7 C.) for from thirty to forty-five minutes. Schorer[28] further concludes that the safest method for pasteurization is in the sealed bottle, allowing at least thirty minutes for heating to the temperature of pasteurization and then pasteurizing at 145 F. (62.7 C.) for thirty minutes. He also wisely advises that all commercial pasteurization shall be carried out under official supervision.

It must never be forgotten that the pasteurization of milk does not do away with the necessity of taking care of it and keeping it cold. It is just as important to keep pasteurized milk cold as it is to keep raw milk cold, because pasteurization simply diminishes the number of microorganisms. It does not destroy them entirely.

While it is easier to approach laboratory methods in the home than under commercial conditions, it is wiser to adopt 145 F. (62.7 C.) for thirty minutes as the standard instead of 140 F. (60 C.) for twenty minutes, in order to be sure that the pasteurization is efficient. The changes produced in the milk at this temperature and time are little, if any, greater than at the lower temperature and shorter time.

It is not necessary to have any special apparatus for the pasteurization of milk in the home, as any dish of sufficient size and depth will do. Each feeding should be placed in a separate clean, boiled bottle. The bottle should then be tightly stoppered with non-absorbent cotton and placed in a pail or dish of cold water, the water in the dish being at the level of the milk in the bottle. The dish should then be placed on the stove and heated until the thermometer, suspended in the water, reaches 145 F. (62.7 C.). The dish and its contents should then be taken off the stove and covered with a blanket. It should be allowed to stand for thirty minutes. The bottles should then be taken out, cooled quickly, preferably in running water, and kept in a cold place until used.

There are several pasteurizers, designed for home use, on the market which are more convenient, although no more efficient. That sold by the Walker-Gordon Laboratory is a good one. Another, designed by Dr. R. G. Freeman of New York, although working on a little different principle, is very satisfactory.

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OPPORTUNITIES FOR THE PRESERVATION OF HEARING *

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The opportunities for the preservation of hearing include (1) systematic aural inspection for the detection of objective signs of impairment of the hearing, and (2) the adaptation of the operative technic to include the preservation of the hearing.

SYSTEMATIC AURAL INSPECTION

This scheme of systematic prophylaxis would apply to all ear diseases and defects not congenital, among them those originating in the pharynx, the nose, the eustachian tube, external canal, the ear complications of general diseases, nervous conditions and trauma. We thus include the stubborn forms of deafness due to chronic middle-ear catarrh, and absolute deafness of labyrinthine or nervous origin, as well as those inflammations of the tympanomastoid region which threaten entire loss of hearing and even life itself. At greater length we may catalogue them as inflammations of the pharynx, obstructions, adenoids and tonsils; inflammation of the nose and irregularities, hypertrophies and obstructions; obstructions and inflammation of the eustachian tube; inflammation of the middle ear and faulty nutrition and atrophy, degenerative states, deficiency in the nerve of hearing, inflammation of the external canal, obstruction by foreign bodies, cerumen and new growths, and especially the common insidious disturbances of the acoustic balance.

Inflammations of the pharynx involving the nasopharynx extend to the tympanopharyngeal tube and cause impairment of its functions, drainage and ventilation. The slight chronic pharyngitis often found in mouth-breathers, gouty or syphilitic persons brings about insidious changes along the tube and middle ear. Gross obstructions to respiration, hypertrophied adenoids and tonsils bring about the same conditions. Smaller obstructions may be large enough, if conveniently placed, to cover the mouth of the tubes or press against them. A very small amount of adenoid tissue in the fossae of Rosenmüller can seriously impede the action of the tubes. Irregularities and impediments to the flow of air and the blood, and lymph circulation of the nasal fossae can cause disturbances of the eustachian tube and middle ear.

The changes which affect the hearing most insidiously are of two kinds: those chiefly inflammatory, and those due to defective ventilation. In either case the results are much the same. First the inflammation causes congestion and increase of the connective-tissue elements, and then contraction, anemia, faulty nutrition, atrophy and degeneration. The choking of the eustachian tube causes the same results without intervention of inflammation directly through the congestion and stagnation of blood and lymph. A defect in the manumetric balance of the tympanum directly affects the drum-membrane. When there is negative pressure the membrane is pushed inward, flexing the ossicular chain. When there is increased pressure in the tympanum, the membrane is blown outward, extending the ossicular chain. Either of these positions is detrimental to the best sound transmission, and when continued long, the effect is serious. Overextension has a detrimental effect on the elastic fibers of the membrane and the ligaments of the ossicular articulations, which in time yield to this overstretching. All these changes directly affect the acoustic balance and render it less capable of transmitting the sonorous vibrations. When once started, this pathologic cycle tends to progress rather than to cease spontaneously, and the structural alterations have no tendency to repair without surgical aid. The atrophy, when once well under way, goes through all the series of changes consequent to faulty nutrition, involves the drum and its contents, and even spreads to the labyrinth.

Decrease of sound perception is the most delicate measure of general nervous exhaustion. It may indicate the commencing of nervous changes which later will destroy the hearing or affect the nervous system very seriously.

Patients should be urged to preserve the fundamental rules of the general hygiene of the ear. They should be advised not to touch the ear deeper than the orifice

28. Schorer: Am. Jour. Dis. Child., 1912, iii, 226.

* Read by invitation at the meeting of the Chicago Medical Society, Dec. 18, 1912

of the external canal, "to scratch the ear with elbow only"; to allow no water to enter the deeper part of the external canal; to keep the nose free; to blow the nose without closing the nostrils, and if possible to avoid loud sounds or continuous sounds of high pitch. My justification in repeating these directions is found in the fact that many ear diseases are caused by neglect of these simple directions.

MEDICAL AND SURGICAL CORRECTION OF EXTRA-AURAL CONDITIONS WHICH THREATEN THE HEARING

General Treatment.—General conditions detrimental to good hearing are amenable to the usually accepted treatment for these conditions. This group consists of circulatory, metabolic and toxic disturbances.

Anemia and arteriosclerosis are causative of deafness because of defective or insufficient blood-supply to the auditory organ. Anemia is the more common of these factors in early life, while arteriosclerosis is more active in advanced life.

Metabolic disturbances interfere with good hearing through trophic and toxic impairment of the nutrition of the auditory organ. Most important in this group is the loss of balance of the internal secretions of the ductless glands. The type of deafness called otosclerosis is conspicuous as the result of altered internal secretions. Deficient thyroid secretion in myxedema is also often the cause of hypothyroid deafness. So-called gouty and rheumatic diatheses are sometimes associated with deafness, which improves on improvement of the general condition. The relief of constipation often relieves poor hearing. Extreme exhaustion is usually associated with impairment of hearing.

Toxic factors are often important causes in deafness. Through them originate inflammatory and degenerative effects on the auditory nerve and its endings. Tea, coffee, tobacco and especially alcohol are well-known factors in impaired hearing, partly through the injury to the auditory nerve and partly through middle-ear disturbances. Drug injury of the auditory nerve is brought about by quinin and salicylates more frequently than by any other drugs. Hypnotic anodynes, such as the antipyrin group and the veronal group, have been used to such an extent that the auditory nerve apparatus has suffered. Syphilitic infection should receive early energetic treatment because the syphilitic poison is injurious to both the auditory nerve and the middle-ear apparatus.

Local Treatment.—This should be directed to the nose, nasopharynx and pharynx. The nose should have even-balanced air passages. There should be no adhesions or even points of contact of the nasal mucous membranes. The nasopharynx should allow free respiration and open ventilation of the eustachian tubes, and there should be no interference with the mobility of the tubal cartilages.

The mucosa should be free from the slightest suspicion of bearing infection or acting as a culture field for pathogenic bacteria. The three tonsils and the accessory spaces of the nose are the regions which may most readily harbor infection detrimental to hearing, through long-continued toxic effect, and by fulminating attacks of middle-ear inflammation.

In children 30 per cent. of serious loss of hearing is due to conditions which if treated in time would obviate injury to the ears. These conditions include suppuration and the so-called catarrhal conditions, which are equally important in this connection. For the prevention of the condition, nasal catarrh and adenoids must be given careful attention.

In the young, proper care of nose and throat, orthodontia and prevention of mouth-breathing are necessary for conservation of the hearing. In adults, disturbed internal secretions, management of infections, anemia and degenerative processes require attention owing to their powerful effect on hearing.

OCCUPATIONAL AND TRAUMATIC DISEASES OF THE EAR

I classify all diseases as occupational which attack a worker in the course of his vocation, whether they arise directly from the nature of the occupation (as for example boiler-maker's deafness), or whether they arise from an accidental occurrence dependent on the kind of employment, such as the rupture of the drum-membrane from an accidental explosion in powder-making.

The enumeration and description of occupational diseases of the ear is valuable, since a study of the subject points out the wide extent to which these diseases prevail. Such a study should direct the public to the necessity of protecting itself against injury from many occupations. This investigation will also collect data which should result in the mitigation of insanitary and harmful conditions. The effect of general ignorance is shown in a striking manner in the backwardness of public opinion and consequently in legislation, but most unmistakably in the lack of interest in the enforcement of protective laws which are even now on the statute books.

How inclusive this subject is will be apparent on considering the occupations which are accompanied by continuous loud sounds, explosions and detonations, rapid changes of barometric pressure, entrance of water into the nose or external canals, concussion of air in the canals, entrance of foreign bodies into the canals, blows about the head, entrance of pathogenic organisms, hydraulic pressure and abnormal high or low barometric pressure in the canals and the upper air-tract. Among the long list of men employed in occupations deleterious to the ears are boiler-makers, machinists, blacksmiths, engineers and caisson workers. In addition, there is a still longer list of occupations which are indirectly conducive to impaired hearing through undue irritation of the upper air-tract.

The etiologic factors in occupational diseases classified according to their importance are: (1) noises; (2) mechanical trauma; (3) explosions; (4) hydrostatic pressure; (5) percolation of water; (6) decreased barometric pressure, and (7) increased barometric pressure.

From a pathologic point of view, a classification of the occupational diseases of the ear in order of their importance is: (1) irritants of mechanical, functional, aqueous or thermal origin; (2) infections; (3) intoxications; (4) exhaustion, local and general; (5) solution of continuity; (6) commotion, and (7) foreign bodies.

The destructive force of the occupational diseases of the ear may be appreciated on considering the number of those affected. The preventive measures are to be sought by arousing public opinion to these evils and to their vital importance. The danger in the case of every occupation should be recognized by law and should be minimized by law. When the public is sufficiently educated to appreciate the loss through these remediable hardships, it will not be slow in demanding salutary legislation, and in punishing by legal penalty. The special means of protection in every instance are obvious.

Another form of aural trauma which is too often regarded lightly or even entirely overlooked is the insufflation of water into the eustachian tube either by accident or by the use of nasal douches.

PRESERVATION OF HEARING IN EXANTHEMS AND CERTAIN INFECTIOUS FEVERS

In exanthems and certain infectious fevers—notably typhoid fever, diphtheria, whooping-cough, pneumonia and syphilis—the preservation of hearing should be safeguarded by careful and constant attention to the ears and nasopharynx. The importance of this advice will be seen when I say that these infectious diseases are responsible for about 47 per cent. of the cases of serious deafness in children. Panotitis, with simultaneous inflammation of the middle ear and the labyrinth, is a serious menace in children after scarlet fever and other infectious diseases; it is evidently due to an exudative process, the bacteria which have caused the middle-ear inflammation also giving rise to inflammation in the labyrinth.

In these exanthems and infectious diseases the ears should undergo objective inspection; the more serious the general condition, the more often should the ears be inspected. In scarlet fever and measles, the ears and nasopharynx should be inspected twice a day. The nasopharynges should be kept clean and free by cleansing applications. If there is any suspicion of fluid in the middle ear, operative interference on the ear is indicated. The presence of fluid in the middle-ear space is suggested by (1) a bulging appearance of the drum-membrane proper or of Shrapnell's membrane, by a waxy or opaque appearance, or by a yellowish tinge of the membrane in cases of pus, and (2) a rise in temperature otherwise unaccounted for. These appearances, as I say, indicate operative interference with the ear, and the drum-membrane should be incised. If the high temperature persists or if the ear discharges pus for forty-eight hours after the section of the drum-membrane and the syringing of the ear, the mastoid antrum should be opened.

PRESERVATION OF HEARING IN CHRONIC CASES OF EAR INFLAMMATION

Much of the chronic deafness met clinically is due to degenerative changes. In spite of this, if the loss of hearing has not gone beyond the last 20 per cent. of the efficient standard, we can make a good prognosis for improving the hearing capacity up to the standard.

The treatment for chronic cases is directed to removing the fundamental cause of the defect in hearing whether it is local, nasopharyngeal or general.

The cases of chronic impairment of hearing usually require an extended course of treatment. In the deafness dependent on nerve lesions our prognosis is encouraging for cure in luetic cases; in other cases the prognosis is discouraging. In the cases of deafness with a persistent ear-discharge when the nerve of hearing is intact, restoration of efficient hearing is the rule. The first procedure is the arrest of the discharge and cicatrization of the discharging passage. In almost all cases this is accomplished by local antiseptic applications. If improvement does not immediately show itself with the use of any one agent, the help of several agents should be tried. A general point in the treatment is to provide a sufficiently large perforation in the drum-membrane. Syringing should be used to clear the canal and middle ear if very much accumulation is present; otherwise, it should be wiped dry with pledgets of cotton. For antiseptics, the following are given in order of their usefulness: Boric acid saturated solution; alcohol; mercuric chlorid, from 1:1,000 to 1:4,000 in water; tincture of iodin; phenol, from 1:20 to 1:40. When the discharge is scanty, it is wiser to use powders than solutions. Of these, boric acid is most useful. Next come iodoform, xeroform, aristol, alumnol and many others. In less than 1 per cent. of the cases of impaired hearing coincident with a chronic discharging ear, an operation is required to arrest the discharge. This operative procedure should preserve intact the middle-ear structures when they are in position.

When the middle ear has cicatrized after the purulent discharge has ceased, hearing is stimulated and brought to efficient proportions by exercise (inflations and massage) and by replacing the lost parts by an artificial drum-membrane.

The local conditions are improved by methods which increase the blood-supply, such as exercise, massage and chemical stimulation, and by mechanical means for stretching adhesions, such as inflation.

The nasopharyngeal conditions are made normal by local antiseptic applications. The most important of these antiseptics are solutions of nitrate of silver, iodin, chinosol and powders of zinc stearate and aristol. Obstructing tissues should be removed by operative means.

The general condition is important and requires care, especially in the condition called "otosclerosis."

PRESERVATION OF HEARING IN ACUTE CASES OF DEAFNESS

In cases in which the onset of the impairment of hearing is acute, aural examination discloses that the cause is a plugged external canal, a congested and obstructed drum, an auditory nerve lesion or a defect of the auditory tract.

The obstructions in the canal which interfere with hearing are easily removed unless they have caused inflammation. A general rule for removing these obstructions is to remove hard cerumen or dry obstructions by forceps or curet, and soft obstructions by syringing.

Congestion of the middle ear is usually of nasopharyngeal origin and is amenable to nasopharyngeal treatment, which should be directed especially to the orifice of the eustachian tube. Fluid in the drum may be blown out by tympanic inflation; sometimes a myringotomy is required. An important part of the treatment is directed to lessening the obstruction in the eustachian tube by nasopharyngeal treatment.

Auditory nerve lesions are more resistant to treatment. The treatment is the same as the treatment of similar affections of the nerves in other parts of the body and should be adapted to removing the cause. Defects of the auditory tract are treated by the method employed in similar brain lesions of other regions.

Acute impairment of hearing from obstruction in the middle ear can be relieved at once and soon cured if it is not due to virulent infection. The means employed should be drainage and inflation through the eustachian tube and drainage and ventilation through the section of the drum-membrane. In cases in which the recent loss of hearing is due to a virulent infection, the indications are usually that immediate surgical intervention is demanded. Even after the smallest interference in ambulant cases, aseptic dressings are imperative in order to guard against secondary infections.

PRESERVATION OF HEARING IN OPERATIONS ON THE EAR

Clinical experience has shown me that in mastoid operations hearing can be both preserved and improved without much additional effort. This effort chiefly comprises more care and attention to detail. In acute infections of the ear, operative interference should not only

restore the hearing to what it was before the infection, but, in certain cases, should even raise the hearing to a more efficient level.

The preservation and improvement of the hearing in mastoid operations demand early and careful operations and rapid convalescence. Lesions of the labyrinth capsule through intratympanic interventions, and especially by the radical operation, can undoubtedly provide the cause for a suppuration of the labyrinth. In such cases, meningitis is imminent and can be averted only by a timely labyrinth operation. Rapid convalescence is assured by following the rules to remove all diseased tissue and to operate as aseptically as possible and to leave no devitalized tissue, such as shreds of connective tissue or detritus in the wound in the shape of bone chips or threads of gauze.

WHEN TO OPERATE TO PRESERVE HEARING

We have learned that in a dense mastoid the suppuration does not tend to resolution, but to continuation and to the development of the dangerous complication of mastoiditis. We have also learned that in a pneumatic cellular mastoid, inflammation goes on either to abscess formation or to resolution. We have learned that in mastoids partly dense and partly pneumatic, with the dense areas occurring near the antrum, the behavior of infection is identical with that of the wholly dense mastoids. These observations show that with inflammation of the antral region shown by inspection, palpation, skiagram, etc., a mastoid operation is indicated in all but the pneumatic bones, and in them when mastoid abscess has been formed. That is, in the pneumatic mastoid, operation should be delayed until the formation of abscess; in the dense mastoid, suppurative inflammation of the mastoid is sufficient indication for mastoid operation, and we should not wait for abscess formation.

The conditions of the ear on inspection favoring operation are fluctuation in the mastoid region, edema over the mastoid region, edema of the osseous canal wall, localized sagging of the inner end of the canal wall, bulging of the tympanic membrane, purulent discharge, pain on pressure in the mastoid region, perforation of Shrapnell's membrane, septic appearance of the patient, and eye-grounds indicating intracranial extension. The nature of the bacterial infection is of interest. In order of their increasing virulence are the staphylococcus, pneumococcus, *Bacillus pyocyaneus*, streptococcus and *Streptococcus mucosus* (or *capsulatus*). The last is extremely virulent and at the same time the symptoms are latent. Mastoid operation is indicated in *Streptococcus mucosus* (*capsulatus*) infection if the ear shows any of the objective symptoms of mastoid infection, and also if the discharge from the ear continues three or four days after the commencement of approved surgical and antiseptic treatment of the middle ear. In obscure cases the differential blood-count is of value. General symptoms favoring mastoid operation are rise of temperature to 100 or more, subnormal temperature (98 or less) or rectal temperature.

The skiagram of the mastoid region favors operation when it shows collections of pus and obscuring of the mastoid cells, or when it shows a mastoid antrum walled about with diploetic or dense bone. Of course, a combination of these conditions points still more strongly to the desirability of a mastoid operation.

In these days there is little excuse to delay operation in purulent middle-ear inflammation after incision of the drum-membrane, if the purulent discharge persists for four or five days in conjunction with a solid mastoid as shown by skiagram. In these early operations the hearing is preserved.

In otology, as in all other branches of medicine, it becomes constantly more important to consider the modification and adaptation of certain stereotyped operations, according to the needs of the individual case. Conservation of parts is the watchword. In mastoid surgery, the preservation of hearing is assured by two things: (1) the preservation of the parts of the mechanism of hearing and (2) the avoidance of cicatrices and adhesions through rapid convalescence.

Now that we have achieved the preservation of life in mastoid operations, we must cooperate for the next triumph, the preservation of the hearing in all cases. And I believe that, in the main, the preservation of hearing will be accomplished through the health of the nasopharynx.

19 West Fifty-Fourth Street.

THE INFLUENCE OF GASTRO-ENTEROSTOMY ON GASTRIC AND DUODENAL ULCERS

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It is generally conceded that gastro-enterostomy exercises a favorable influence on open ulcers of the stomach situated in the antrum or at the pylorus, and on open ulcers of the duodenum. By this is meant that it establishes conditions favorable to the healing of ulcers which have resisted all other known forms of internal treatment. It is likewise recognized that this procedure has no effect on ulcers situated in parts of the stomach other than those just mentioned. It is furthermore admitted that the good effects of gastro-enterostomy on ulcers in the antrum, pylorus or duodenum are not always a lasting one; that recurrence or recrudescence of the ulcer takes place in at least 45 per cent. of the cases. It is well to state these facts at the outset, and with the lessons taught by them proceed to change or modify the operation of gastro-enterostomy as applied to the cure of gastric or duodenal ulcer.

As we do not know the etiology or pathogenesis of gastric or duodenal ulcer, it is difficult to state definitely how or in what manner our therapeutic procedures exercise a healing influence on them. This is not quite true of the effect of gastro-enterostomy; for the creation of a new opening between the stomach and uppermost part of the jejunum can exercise an influence on antral, pyloric or duodenal ulcer in only two ways: either by side-tracking the food contents of the stomach away from the pyloric area into the jejunum, or by permitting a reflux into the stomach of such contents as are contained in the jejunum proximal to the seat of the new anastomosis.

Gastro-enterostomy favorably affects ulceration of the stomach by one of these means alone or by both together, and it is decidedly worth while to discuss this subject in its minutest detail. This discussion will help to correct erroneous ideas that some may have as to the movement of gastric contents after gastro-enterostomy, and may help us to understand why ulceration in some parts of the stomach is benefited by gastro-enterostomy, whereas it is not at all favorably influenced when it is located in other parts of the organ, and finally why

ulcers that have presumably healed after gastro-enterostomy recur several months or years later.

As to the movements of the gastric contents after gastro-enterostomy, it is an almost general opinion of medical men, surgeons as well as internists, that after gastro-enterostomy there is a change in the course which the food takes in going from the stomach into the intestines; to wit, that all the gastric contents leave the stomach through the new opening, and practically nothing passes through the pylorus into the duodenum. It is thought that the stomach is normally a passive reservoir during digestion, and that the creation of a new opening at the most dependent point of the organ causes the gastric contents to gravitate through it into the small intestine. The operation of gastro-enterostomy is thus looked on as a drainage operation, and the surgeon has been enjoined to make the new stoma at the lowest point of the stomach, and to place the patient in the upright position immediately after recovery from the anesthetic, thus to facilitate emptying of the stomach by gravity. Let us see how much of this is true. In the first place, the stomach as long as it retains its normal tone is never a passive reservoir; on the contrary, when food is present within the viscus the cardiac end is always exerting a positive pressure on it, and the pyloric end is the seat of continuous peristaltic movement. Furthermore it is impossible to make the new opening at such a point in the stomach that in the changing positions of the organ the opening will always be at its most dependent part, and, finally, it has been experimentally proved that the hydrostatic conditions in the abdominal cavity are such that gravity drainage from the stomach is impossible. As a proof of this last statement it has been experimentally shown that when a gastro-enterostomized stomach is filled with water, the latter does not run out by itself even though the animal is in an upright position. It is also most important to remember that material never moves along any part of the alimentary canal unless the pressure is greater on one side of it than the other. Kelling[1] has determined experimentally and I have found in the human subject that the chyme always takes its normal passage through the pylorus if the latter is patent rather than through any artificial opening. In view of these facts we must conclude that if the pylorus is patent the new anastomotic opening serves no purpose for drainage or for side-tracking of the gastric contents into the jejunum. All of the gastric contents pass through the pylorus when it is patent in spite of the fact that we have a wide, sufficient communication between the stomach and the jejunum. Only when the pylorus is closed do the contents of the stomach pass through the anastomotic opening into the jejunum, and the tighter the closure of the pylorus the more completely do the contents pass through the new anastomotic orifice.

How can we apply these considerations to the question of the influence of gastro-enterostomy on gastric ulcer? If the ulcer is situated in the pyloric end of the stomach, at the pylorus or in the first portion of the duodenum, there is invariably attendant on the ulcer a spastic condition of the pyloric muscle which more or less completely closes this orifice. It is unnecessary for us at present to speculate as to whether the spasm is primary to the ulcer or whether the ulcer produces the spasm, though it is my opinion that the spasm of the pylorus is a purely reflex result of the presence of the ulcer. In substantiation of such an assumption I would simply recall the fact that an ulcer or fissure of the anus is invariably attended with a spasm of the sphincter muscle of the rectum; that a fissure at the angle of the mouth is invariably attended with a spasm of the orbicularis oris; and that ulceration at the ileocecal orifice causes a spasm of the muscular fibers at this part of the intestine.

It might also be mentioned here that when the ulcers in the stomach are not situated at or near the pylorus we do not find any such spasm of the pyloric muscle, which is exactly in accordance with ulcerative conditions situated at a distance from the anal sphincter, oral sphincter or ileocecal orifice.

To come back then to the subject under discussion, I have stated that ulcers situated in the pyloric region are invariably attended with a spastic condition of the pyloric muscle which more or less completely occludes the pyloric orifice. When such spasm is present the effect of gastro-enterostomy is exactly the same as when the pylorus is organically closed by stricture or by tumor, and in such a case the gastric contents after gastro-enterostomy no longer pass through the pyloric orifice, but are more or less completely evacuated through the new anastomotic orifice. The ulcerated area of the stomach is thereby guarded from the constant irritation of food, and healing is thus favored.

Let us now go a step further. After healing of the ulcer takes place the spasm of the pyloric sphincter muscle relaxes; the pylorus again becomes patent; the stomach contents no longer pass through the new anastomotic orifice, but through the patent pylorus. Is it any wonder then that if the original cause of ulcer still exists, the traumatism produced by the food constantly passing across the old ulcerated area at the pyloric orifice should favor a recurrence or recrudescence of an apparently healed ulcer?

Furthermore, as the tendency is a strong one when the pylorus is patent for the new stoma to contract and even close spontaneously, we cannot assume that the creation of a new opening between the stomach and bowel acts as a prophylactic against the possible recurrence of an ulcer.

If the ulcer is located in the stomach elsewhere than at its pylorus or the first portion of the duodenum—that is if it is situated on the lesser curvature, near the cardia or in the fundus portion of the stomach—we cannot expect gastro-enterostomy to have any influence on it for with such an ulcer not only is there no side-tracking of the gastric contents through the new stoma, since the pyloric orifice is not the seat of a reflex spastic closure but even if there was a complete diverting of the food into the jejunum, such a condition would not protect the ulcerated area in the body of the stomach or cardiac region from the constant irritation of the food passing over it. In such cases the new stoma soon contracts and closes without having produced any effect on the ulcerated area.

Therefore we must conclude that gastro-enterostomy can accomplish good only in such ulcers as are situated in the antrum, pylorus or first part of the duodenum—ulcers that are always attended with pyloric spasm in consequence of which the pyloric orifice is closed. In virtue of such pyloric closure the operation of gastro-enterostomy is able to divert the food contents from the ulcerated area and thereby afford to it rest and freedom from irritation; when gastro-enterostomy does not afford such protection from trauma to the ulcerated area, as when it is situated in other parts of the stomach, it will have no favorable influence on the healing process.

1. Ann. Surg., 1907.

Let us now turn to the second method in which gastro-enterostomy may favorably influence a gastric ulcer, namely, by reflux of duodenal contents proximal to the site of the anastomosis into the stomach. It would be hard to say that such reflux is present in all cases after gastro-enterostomy, but in almost all the cases in my experience such reflux was present, as proved by the fact that bile and pancreatic juice could always be evacuated from the stomach by means of the stomach-tube. It was formerly thought that the presence of bile and pancreatic fluids in the stomach was evidence of a vicious anastomosis between the stomach and the intestine, but clinical experience has long since taught us that the presence of bile and pancreatic juice in the stomach after gastro-enterostomy is the rule rather than the exception, and that the stomach bears such reflux of contents very well. The contents of the duodenum and jejunum proximal to the site of the anastomosis are chiefly bile and pancreatic juice, and the secretions of the duodenal and jejunal walls. Such contents are strongly alkaline in character. This strong alkalinity neutralizes the hyperacidity of the gastric contents which is attendant on most cases of gastric ulcer, and there can be no question that immediate relief of this distressing symptom is affected by gastro-enterostomy. It is not at all unusual for patients to state immediately on recovery from the anesthetic that the hyperacidity from which they suffered prior to the operation had been relieved, and it is reasonable to assume that this relief is due to the neutralization of the hyperacid gastric contents by the reflux of the strongly alkaline contents through the anastomotic opening.

Does such neutralization of gastric contents promote the healing of the ulcer? If this were the case we would expect that occasionally an ulcer situated at sites other than the antrum, pylorus or first part of the duodenum would be favorably affected by gastro-enterostomy, for surely the entire contents of the stomach are neutralized, and there is no reason why ulcers at the lesser curvature, cardiac end or fundus of the stomach should not be as favorably influenced in this way as are ulcers in the pyloric region. In the absence of such beneficial influence on ulcers other than in the pyloric region we cannot assume that the reflux of intestinal contents into the stomach with the attendant neutralization of a coexisting hyperacidity is the cause of healing.

There is one other way in which gastro-enterostomy may favorably influence gastric ulcer, and I do not bring it forward prominently because of the insufficient experimental and clinical data on which my theory would rest.

As stated at the outset of the paper, we have no exact knowledge of the causation and pathogenesis of gastric ulcer. Recently, however, several experimental workers have advanced the theory that gastric and duodenal ulcer are due to infective states of the stomach and duodenum; that given a minute or gross defect in the gastric mucosa produced by trauma or other cause, such minute or gross defects will grow into ulcerations, provided the stomach contains pathogenic bacteria. If this theory proves to be true we could understand how gastro-enterostomy exerts additional good influence on gastric ulcers, for with a closed pylorus and thereby a closed stomach cavity, the pathogenic bacteria in the stomach rise to a high degree of virulence, and thus keep active the ulcerating process. The establishment of a new gastro-enteric opening by facilitating discharge from, and emptying of, the stomach will also diminish the virulency of its contained bacteria, and so promote a healing of the ulcerated area. There is no question whatsoever that when such infective processes exist in conjunction with ulcers, as has happened in my experience, the symptoms of the ulcer and the evidences of the infection have been relieved by gastro-enterostomy.

To sum up: Gastro-enterostomy is of value only in pyloric, antral or duodenal ulcers that are attended with pyloric spasm, and it has absolutely no value in ulcers situated in other parts of the organ, though immediate relief from the distressing symptom of hyperacidity is effected by gastro-enterostomy in all cases of gastric ulcer, wherever the ulcer is situated.

Furthermore, since when the pylorus becomes patent, the gastro-enteric orifice tends to contract and close, the tendency of recrudescence or reformation of ulcer is always present, provided the primary exciting cause still exists.

It is now worth while to see whether or not we can prevent the recurrence or recrudescence of those ulcers that are favorably influenced by gastro-enterostomy: The high percentage of recurrence, the tendency to malignant degeneration of the ulcer, has led surgeons and internists alike to the conclusion that it were better to excise the ulcer, or to do pylorectomy in place of gastro-enterostomy. There can be no question as to the advisability of excising an ulcer that is favorably situated in the antrum, pylorus or duodenum, not so much to prevent recurrence of the ulcer, for it has not been the experience that excision alone protects against recurrence, but rather to prevent a possible malignant degeneration of the ulcerated area.

For the time being, however, we are concerned chiefly with the thought of how to prevent the recurrence or recrudescence of healed or healing ulcerations in the pyloric region. It has been clinically found that pylorectomy is a far greater safeguard against recurrence than is gastro-enterostomy or excision alone, but pylorectomy has a mortality of from 12 to 14 per cent. under the most favorable conditions, whereas gastro-enterostomy has a mortality of from 1.5 to 2 per cent. under similar circumstances, and the conscientious surgeon must always be in doubt when facing an ulcer of the stomach whether it is not more advisable to do a simple gastro-enterostomy with its low mortality, than a pylorectomy with its much higher death-rate. Is there not a way in which we can obtain the same good effect of lasting cure by gastro-enterostomy as by pylorectomy?

This we can answer in the affirmative, by the operation of gastro-enterostomy with pyloric exclusion.

This consists of gastro-enterostomy practiced as usual, with the addition of an exclusion of the antrum, pylorus and duodenum by means of a purse-string ligature of heavy linen thread passed round the stomach just proximal to the antrum, and tied snugly enough to occlude the stomach at this point, without constriction of its walls or its circulation. Instead of a ligature we can enfold, by means of several layers of suture, the stomach wall at the selected point, and thereby exclude the antrum, pylorus and duodenum from the rest of the stomach cavity.

This operation of pyloric exclusion I have practiced many times since 1901, for various conditions; for bleeding ulcers situated in the pyloric region, for duodenal fistula or accidental wound of the duodenum, and for simple or callous ulcer in the pyloric portion of the stomach. I have practically never seen any bad results from such occluding ligature or occluding set of sutures. In one case in which a ligature was applied by a colleague it cut through the gastric wall, either because it had been tied too tightly or because the gastric wall at

the site at which it was applied was infiltrated and brittle. The passage of such an occluding ligature does not in any way increase the mortality which is attendant on gastro-enterostomy, nor does it materially increase the time of the operation. It takes but a few minutes to pass such an occluding ligature. It effectually and permanently excludes the antral end of the stomach and duodenum from the passage of stomach contents through them.[2] In the presence of such a ligature all the contents of the stomach must pass through the gastro-enteric orifice. As such an occlusion is a permanent one, the gastro-enteric orifice does not close, and therefore there can be no recrudescence or recurrence of ulcer as when simple gastro-enterostomy is established and the pylorus becomes patent. Von Eiselsberg has modified this operation of mine by completely dividing the stomach proximal to the antrum, and closing both ends with a double row of sutures. I can find no advantage in such modification. On the contrary, it carries with it the additional risk of infection, and thereby tends to increase the mortality connected with gastro-enterostomy.

As previously stated, I have found the occluding ligature always safe and easily applied. I am accustomed to pass a heavy Pagenstecher thread behind the stomach, just proximal to the antrum, then to thread this ligature on a curved needle, take one or two stitches through the peritoneum and muscularis of the anterior wall of the stomach, just to prevent the ligature from sliding, and then slowly tie the ligature, being careful to bring the mucous walls of the stomach together, but not to constrict the circulation of the organ. The mortality of this operation is exactly the same as that of gastro-enterostomy. It has all the advantages and none of the disadvantages of pylorectomy. It is the only way in which, on the basis of preventing the passage of food through the patent pylorus, we can prevent the recrudescence or reformation of gastric ulcer.

In closing this paper I especially wish to emphasize the following points:

Simple gastro-enterostomy can influence pyloric or duodenal ulcer only when there is an attendant pyloric spasm. In the absence of the latter all the food passes through the patent pylorus, even though a gastro-enterostomy is present and so the ulcerated area is not protected from trauma.

The reflux of duodenal contents into the stomach is a natural attendant on gastro-enterostomy, and serves to alleviate the distressing symptom of hyperacidity, but it does not favor the healing of the ulcer.

Gastro-enterostomy will not protect against a recurrence of the ulcer. Barring the question of malignant degeneration of a healed or healing ulcer, excision of an ulcer has no particular merit over a gastro-enterostomy toward preventing recurrence or recrudescence.

Pylorectomy does protect against recurrence, but it has an attendant higher mortality. Gastro-enterostomy with pyloric exclusion favors the healing of the ulcer, and has the same value in preventing recurrence as has pylorectomy, with the great advantage over the latter of a very low mortality.

923 Madison Avenue.

2. Shown by *x*-ray bismuth plates and secondary operations.

The Rectum Not a Fecal Storehouse.—The rectum is not normally a fecal storehouse, although through habit it often becomes so, especially in the female. Examination of the male for service in the army shows the rectum usually empty.—William J. Mayo in *American Journal Medical Sciences.*

SOME FEATURES OF THE THEORY AND PRACTICE OF MEDICINE DURING THE SEVENTEENTH CENTURY

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(Concluded from page 820)

HARVEY AND SYDENHAM

Of the theory itself of the circulation I shall not have to speak in detail. The children of to-day in the intermediate grades of the public schools know better than the great teachers of anatomy whom I have mentioned the course of the blood from the left ventricle through the arteries, capillaries and veins back in a circle to the right ventricle and through the lungs. Indeed, they know it better than Harvey himself knew it, for even to him a complete demonstration was denied, since it was not until 1661 that Malpighi observed with a microscope the passage of the blood through the capillaries, whose continuity with the arteries and veins Marchetti finally proved by injecting them. Harvey affirmed his conviction that such a communication must exist, but it was on this ultimate demonstration that his discovery finally rested.

The effect of Harvey's publication on his own life and on his practice possesses but little interest for us now. How he was buffeted and abused and reviled is a matter of personal record that I, fortunately, shall not have to transcribe. Something of the same feeling, though far less bitter and less enduring, was expressed 245 years later toward Lister, when he first announced his belief in wound-infection. His own university (the University of London) regarded him as a heretic, and the earliest recognition that he received came to him from the countrymen of Pasteur and from those of Virchow. The whole miserable story concerning Harvey is better forgotten.

The effect, however, on the theory of medicine was startling enough. The whole structure was shaken and much of it was destroyed. The theory of "natural spirits," of "vital spirits" and of "animal spirits" disappeared from medical terminology, though the phrases remained embalmed in current speech. The doctrine of the humors, once so predominant, gradually faded into insignificance; Galen was discredited, and the tyranny of authority was forever broken; the four elements, earth, air, fire and water, and their four conditions, hot, cold, moist and dry, began to give place to a new conception of the working of the body, and physiology, the study of vital functions, came for the first time under experimental observation. Picquet, at Montpellier, in 1647 traced the lacteals to the receptaculum chyli and demonstrated that the thoracic duct empties into the left subclavian vein; Peyer and Brunner discovered the intestinal glands; Schneider proved that the nasal mucus came from the membrane lining the nostrils and not from the brain through the cribriform plate; Wirsung found the duct of the pancreas; Highmore described the structure of the testicles and the seminal ducts, and Needham studied the functions of the ovaries. The tourniquet was invented by Morel during the siege of Besançon in 1674, and the obstetric forceps was invented by Peter Chamberlain about 1630. The progress that medicine made in the seventeenth century was marvelous. The discovery of the circulation was found to be the key to whole departments of medical knowledge.

The respiration still remained a mystery. It had been thought that as the heart and stomach possessed an

innate principle of heat, so the lungs possessed an innate principle of expansion. Other principle there seemed not to be, though the action of the intercostal muscles had been observed. Jan. 22, 1666, Pepys noted in his diary: "The first meeting of Gresham College since the plague. Among other fine discourses, what pleased me most was Sir G. Ent" (then president of the College of Physicians), "about respiration; that it is not to this day known or concluded on, among physicians, nor to be done either, how the action is managed by Nature or for what use is it." Yet at this very time Borelli was studying the resemblance between the action of inspiration and that of the so-called vacuum pump, then recently (1654) invented by Guericke. Borelli was a professor of mathematics in Pisa for some years before his death in 1679. Of course this analogy in no sense constituted an adequate theory of respiration, for which 150 years must yet pass before the air inspired could be understood chemically, and the absorption of oxygen and the elimination of the products of combustion noted and measured. In fact, it was not until 1837 that Heinrich Gustavus Magnus published in the proceedings of the Berlin Academy of Sciences the complete solution of the process of respiration as we to-day understand it. And yet Borelli's pump-theory of respiration was as great an achievement as was Guericke's pump itself, which superseded the screw of Archimedes.

In the early part of the seventeenth century, then, medicine was a child clinging to the skirts of philosophy. Bacon was a philosopher; Caesalpinus, although he was physician to Clement VII, was a philosopher of eminence. Linnaeus acknowledged his obligations to Caesalpinus, whose range was almost universal. Caesalpinus taught that the world could be reduced to two principles, God and matter, and that all finite intelligences, the human soul, and angels and demons, belonged to the realm of matter. Nothing could be bolder than his philosophical speculations. He was a consistent materialist. Sarpi was a theologian and philosopher rather than a physician. Descartes wrote much on medicine. Locke was engaged in the practice of medicine when he wrote his constitution for South Carolina. Two years earlier, in 1667, he was physician to the Earl of Shaftesbury, in whose family he resided. Dugald Stewart said of Locke:

> No science could have been chosen, more happily calculated than medicine, to prepare such a mind as his for the prosecution of those speculations which have immortalized his name: the complicated and fugitive and often equivocal phenomena of disease, requiring in the observer a far greater portion of discriminating sagacity than those of physics properly so-called; resembling, in this respect, much more nearly the phenomena about which metaphysics, ethics and politics are conversant.

In such hands, however, the practice of medicine could not become developed. Even Harvey seemed to fail in this respect, although it is a difficult task to estimate his professional worth as a physician on account of the deluge of abuse with which his enemies sought to overwhelm him. This result he himself foresaw. "I not only feared injury to myself," he wrote, "from the envy of individuals, but I trembled lest all mankind should become my enemies." Dr. Gabriel Harvey, Spenser's evil genius, was 83 years old when William Harvey's book was published. While conceding that his namesake was a very fortunate antagonist, Gabriel Harvey maintained, in the seventeenth-century Latin, that William Harvey was in no repute whatever as a physician.[8] Gabriel Harvey says that his namesake was unskilful enough to give Lord Rainton a purge so powerful that "one-half of it operated eighty times, and the whole dose would probably have sent the patient to Hades." Aubrey said of William Harvey that "though the profession would allow him to be an excellent anatomist, yet I have never heard that any one admired his therapeutic way." Harvey himself said that after his book on the circulation of the blood came out, he "fell mightily in his practice, and was believed by the vulgar that he was crackbrained, and all the physicians were against him." Among his contemporaries, as Dr. Johnson says of Blackmore, he was much oftener mentioned by his enemies than by his friends.

But at the very time, June, 1645, when Dr. Harvey was occupied during the battle of Naseby in watching over the infant children of King Charles, there was a young man fighting under the command of Cromwell who was destined to represent the very best and highest traditions of the profession of medicine—destined to perpetuate the spirit of Ambrose Paré and to transmit it unimpaired to Haller and to Boerhaave. Having given a passing glance at the spirit of medical ignorance as exemplified in Dr. Sangrado and at the spirit of medical vanity and intolerance as illustrated by the physicians whom Molière described, there seems a necessity to fill out the picture of the practice of medicine in the seventeenth century by saying a few words of one of the exponents of its scientific and humanitarian spirit. This exponent is Thomas Sydenham.

Sydenham was born in 1624, two years later than Molière and four years before William Harvey's theory was given to the world. He came of an excellent family, that of the Sydenhams of Dorsetshire; and in 1642, at the age of 18, was entered as a commoner of Magdalen College, Oxford. Already the civil war between Charles and the Parliament had begun with the battle of Edgehill, and Sydenham left Oxford shortly after his entrance and enlisted in the army of the Parliament, in which two of his brothers also served, the eldest, William, holding a commission as colonel under Parliament. The Earl of Clarendon notes the general disaffection of Dorsetshire to the King's cause.

June 14, 1645, the battle of Naseby was fought, which put an end forever to the King's hopes of success in war; and on May 5, 1646, Charles surrendered his person to the Scots at Newark, only to be handed back by them to Parliament and to be imprisoned in Holmeby House. Sydenham, then 22 years old, laid down his musket and returned to Oxford. The war was finished. There is some interest in noting that John Bunyan had shouldered his musket and marched in the same rank with Sydenham.

In 1648 he took his degree of M.B. without having taken the preliminary degree in arts. There is a tradition that he afterward spent some time in study in Montpellier—how long we cannot discover—after which he returned to London and engaged in the practice of medicine. From the humble obscurity of the first years of his practice we can glean nothing of interest. The date of his first achievement is May 7, 1666, eighteen years after he had taken his bachelor's degree in medicine, and consists of a notice in the transactions of the Royal Society, then in the second year of its existence, reviewing his first work, entitled "A Method of Curing Fevers, Based on My Own Observations."[9] The principal interest of this work to-day does not consist

8. Felicissimus anatomicus, licet medicus nequaquam insignissimus.

9. Methodus Curandi Febres, Propriis Observationibus Superstructa.

in his classification and treatment of fevers, but in his revelation of himself. What was the last thought in his mind in writing it, is our first thought in reading it after 246 years, for what he thought is of less value than what he was. His prescriptions are not of much use to us. No one would think to-day of treating a case of intestinal obstruction, for instance, by applying a split puppy, hot, to the abdomen, but his method is perennially instructive. After all, it is not what a man knows but what he is that counts.

He possessed a clear insight into the significance of the various symptoms of disease. He considered carefully their relative values. This is one of the highest qualities of the human mind. It is what constitutes sanity. Not merely the most conspicuous symptom impressed him, but the most important—the one about which all the others were grouped—the cardinal symptom. As he says himself, "It is important in describing any disease, to consider the constant phenomena apart from the adventitious or accidental ones." These constant phenomena were what constituted the exact recognition of disease. The others he did not neglect, but he rightly regarded them as of subsidiary importance. This is a true method of observation.

His mind was remarkably free from the influences of superstition and from the stifling traditions of the ancient masters. He was not uninfluenced by the beliefs of his time—who of us is?—but when the accepted theories of disease were disproved by his experience, they ceased to direct his practice. We have rightly discarded almost all of the theories that were then current—we no longer believe, for example, that the plague was sent as a punishment for moral offenses; we no longer believe that small-pox is due to an atmospheric concoction of noxious vapors; we seem to have touched bottom in our explanation of malaria and of yellow fever; but in spite of Sydenham's faulty theory of disease, or rather in spite of the inadequate etiology of his time, it is probable that few physicians of to-day equal him in the accuracy of his observation, and that none would excel him in the skilful adaptation to the treatment of disease of the few and imperfect means at his disposal. He was obliged to rely on himself for many things. He was a fortunate man. He had no clinical thermometer, no stethoscope. The analysis of the urine consisted in an appeal to the sense of taste. There was no general recognition of the significance of the pulse-rate. Howell says, "Some pulses have been known to beat thirty thousand times an hour in acute fevers." In 1666, the year when his book on "Fevers" appeared, and the year when Molière's "Misanthrope" was written, Sir George Ent maintained that "the urine was not borne to the kidneys through the veins but through the nerves."

No one ever cured so many diseases with such inadequate resources. This is the highest praise that can be given to a man, and Sydenham merits it. "It is one of the elements of his superiority," says Latham in his "Life of Sydenham," "that he looked out for his cases more watchfully, looked into them more closely, and appreciated better the facts that they disclosed, than his fellows did." He never allowed his theories of disease to obscure his attentive observation of symptoms, or to come between him and his patient's welfare, for his purpose was to cure them. There is an unmistakable strain of exaltation in his voice when he records the recovery in a serious case. It is manifest that his whole heart was in his work. There is an intense sincerity in him. In the Koran there are condensed utterances where a whole thought is expressed into a single word. It is a witness to Mohammed's supreme conviction. "Assuredly," he says, and stops there. It is sufficient. So Sydenham attests his own earnestness in emphatic phrases. "Observe this watchfully," he says, to impress his thought on the reader; and again, "This I have proved by abundant experience," or "This must not be forgotten," or "Carefully attend to this." Such sentences are luminous.

Then again there is an excellent humility in him, which reminds us of Ambrose Paré's constant utterance, "I dressed him and God cured him." Sydenham is full of the same spirit of piety. "We have good reason for believing," he wrote, "that there are certain sorts of fever which Nature cures by a way of her own"; and again, "The disease must be attacked easily and, as far as its nature will allow, must go off of its own accord." "We now come," he says again, "to consider what our efforts must be to assist Nature in the elimination of the morbific matter, in her own way and after her own fashion." "Meanwhile," he records in his report of a case of continued fever, "I watched what method Nature might take, with the intention of subduing the symptoms by treading in her footsteps. Now while I so watched the disease, it departed; slowly and safely—still it departed. I often think," he reflects, "that we move more hastily than we ought to do, and that more could be left to Nature than we are at present in the habit of leaving her. To imagine that she always wants the aid of art is an error." It needed some courage to write that in the seventeenth century. From all these observations he drew a wonderful truth, whose statement alone would entitle him to a high place in his profession. It is this: "a fever is Nature's engine which she brings into the field to remove her enemy."

One would scarcely look in an essay on "Dysentery" with the expectation of finding a lyric utterance, and yet that is where he sings the praises of opium. He says:

> And here I cannot but break out in praise of the great God, the giver of all good things, who hath granted to the human race, as a comfort in their afflictions, a medicine of the value of opium, either in regard to the number of diseases that it can mitigate, or its efficacy in extirpating them! So necessary an instrument is opium in the hands of a skillful man, that medicine would be a cripple without it; and whoever understands it well will do more with it alone than he could well hope to do with any other single medicine. To know it only as a means of procuring sleep, or of allaying pain or of checking diarrhea, is to know it only by halves.

Sydenham's achievements were his own, and his limitations were the result of the conditions of his time. For he had his limitations and justice requires that they should receive a word also. Though an intimate friendship bound him closely to two of the best minds of his age, Locke and Boyle, he was not qualified to emulate their breadth of mind and their large scope of thought.

In 1663 quinin was introduced into general use in England under the name of jesuit's bark or cinchona. Sydenham used it and praised it, but without acknowledging or apparently recognizing its supreme value in intermittent fever. To tell the truth, cinchona fell among thieves, and was early discredited by its association with quacks, who advertised it for personal fame and who exploited it for selfish profit. Not until many years had passed away did cinchona recover from the contamination of its early associations.

Sydenham set little store by the discovery of Harvey. Not that he actively disparaged it, for he never mentions the name of his great contemporary, but he evidently thought that the practice of medicine, so far as

it had to do with the conquest of disease, was very little indebted to the anatomists and physiologists, who dealt purely with the structural and theoretical departments of medical research.

The microscope also he ignored, even neglecting to inform himself of what it had already revealed. In 1661, as we have seen, Malpighi observed the capillaries in a frog's mesentery, and this confirmation of Harvey's discovery was one of universal interest; yet more than twenty years afterward, and in spite of the fact that Malpighi came to London and lectured before the College of Physicians on his observations with the microscope, Sydenham wrote, "We may know the larger organs of the body, but its minute structure will always be hidden from us. No microscope will ever show us the minute passages by which the chyle leaves the intestine, or those by which the blood passes from the arteries to the veins." The truth seems to be that Sydenham, in following the reaction against tradition, went too far, and disregarded as without value all the observations and discoveries of his contemporaries which did not promise an effective result in the conquest of disease.

Yet, while recognizing his limitations, we are far from feeling that any blame is to be imputed to him for them. Perhaps a wider horizon might have impaired the value of his actual vision, and have destroyed the great lesson of his life. That lesson is the lesson of practical work and not the lesson of science alone. Sydenham possessed a genius for the practice of medicine. His mind was exactly calculated for the work he had to do, and his courage compels our admiration.

His fame is secure. Haller exalted his name above all of his contemporaries and called his period "the Age of Sydenham." It was thus made to constitute an epoch. In this estimate we must concur—to this award we must contribute. And it is a singular honor to bestow on him, when we consider the eminent men who conspired to render his century so illustrious, that he should be selected as representing the best attainment of professional excellence of his time.

THE EFFECT OF COPPER ON EXPERIMENTAL TUBERCULOUS LESIONS

PRELIMINARY NOTE *

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CHICAGO

Copper, in view of its reputed germicidal action and its relatively low degree of toxicity for higher mammals, would seem to have possibilities as yet unrealized in the therapeutics of infectious diseases. There is considerable literature of one sort and another on the use of copper salts for the treatment of infectious diseases, but most of it is sporadic in character, and apparently the results described have not been such as to lead to any very general adoption of copper in chemical therapeutics. In recent years perhaps the most satisfactory results have been obtained with copper in treatment of diseases due to higher fungi, such as oidiomycosis, actinomycosis and sporotrichosis, as recommended especially by Bevan. With the introduction of the principles of chemotherapy by Ehrlich, it seemed possible to us that organic compounds of copper might be successfully developed which would have distinct advantages in the treatment of bacterial and fungous infections, over the arsenic compounds which have been so successful in protozoan infections, in view of the supposed high bactericidal and low toxic properties of copper in comparison with arsenic. For some time experiments have been conducted in this laboratory with the object of testing thoroughly and, if possible, developing this hypothesis with particular reference to the treatment of tuberculosis.

Recently a series of papers has appeared reporting results in the treatment of experimental and clinical tuberculosis which are of so sensational a nature, and which promise to arouse so much premature enthusiasm and speculation, that we feel it our duty to present at this time the entirely adverse results of such work as we have completed. The first group of these papers, by Countess von Linden,[1] Prof. E. Meissen[1] and A. Strauss,[1] appeared in the *Beiträge zur Klinik der Tuberkulose*.

In the first of these papers Countess von Linden reports that the work was initiated by Finkler some time before his death, and was continued by the three authors mentioned above, her part being the experimental investigation. With the experiments in which methylene-blue was used we shall not concern ourselves here, but shall consider only the work with copper. Von Linden reports that copper chlorid and copper tartrate in 1 per cent. solutions "weaken" the tubercle bacillus in from twelve to twenty-four hours, but that a "complex lecithin copper compound" (the method of preparation and composition of which are not described), in 1 per cent. solution in oil, "considerably weakens" tubercle bacilli in five hours, and kills them in twenty-four hours. This lecithin copper compound is said to penetrate the tubercle bacillus, not only in direct experiments in which the bacilli are rubbed up in a mortar with the compound, but also, it is intimated, in tuberculous lesions in animals which have been treated with copper. Four series of experiments (three only completed) with copper are described in which, respectively, three, four, seventeen and eight animals were used. The copper was used at first in the form of chlorid, copper-potassium tartrate, and oily emulsion of copper cinnamate; later in the form of copper-lecithin compound. "All copper experiments agreed in showing that the curative property of these preparations is a particularly energetic one." Rapid improvement and recovery from even advanced infections in guinea-pigs is described, so small an amount as 0.0025 gram copper in a single injection having, the author states, produced healing of the local lesion at the point of infection. The treated animals lived longer than the controls, and at autopsy the lesions were more localized. The details of all the experiments are not given in this paper (nor elsewhere, so far as we can find) so that it is not possible to review them critically or to learn exactly the proportion and degree of favorable results. It is stated, however, that "the impression was obtained that even after the first injection the disease in the different organs comes to a standstill, and that, if in the correct intervals further treatment is given, the lesions heal with great certainty, without allowing recurrences to develop. In severe infections twelve injections, totaling 0.01 gram copper, have sufficed to accomplish healing, although still some isolated encapsulated foci were found not yet sterile."

* From the Otho S. A. Sprague Memorial Institute and the Pathological Laboratory of the University of Chicago.

1. Von Linden: Die Ergebnisse der Finklerschen Heilverfahrens bei der Impftuberkulose des Meerschweines. Beitr. z. Klin. d. Tuberk., xviii, No. 2. Meissen, E.: Meine Erfahrungen bei Lungentuberkulose mit Iod-Methylenblau und Kupferpräparaten. Ibid. Strauss, A.: Meine Erfahrungen mit Iod-Methylenblau und Kupferpräparaten bei äusserer Tuberkulose, Speziell bei Lupus, Ibid.

In view of the very high degree of susceptibility of the guinea-pig to inoculation tuberculosis, these results are nothing less than marvelous, and to many who have had experience with tuberculosis in these animals they are incredible.

Meissen reports his experience in the treatment of pulmonary tuberculosis along the same lines, forty-seven cases of moderate severity having been investigated, in which 80 per cent. of good results were obtained under treatment with copper "according to my impression materially better than in similar cases where only the usual treatment was used. In certain cases the favorable action surprised me." He did not try the methylene-blue treatment, because, he says, in the animal experiments the copper was more effective.

Strauss used both the methylene-blue and the copper treatment on lupus cases, trying all the copper compounds mentioned, both internally and locally, the copper being readily absorbed from salves containing the lecithin compound. Good results were obtained in almost all cases of lupus, better with copper than with methylene-blue; no satisfactory results were obtained with other skin diseases.

These papers were shortly followed by a paper by Prof. Hugo Selter[2] who seems grieved at having been left out of consideration although he was, he asserts, intimately associated with part of the work. He makes the important statement that certain of the animals reported by Countess von Linden showed when he examined them, no difference from the controls; also, his own experiments with methylene-blue gave no favorable results in tuberculous rabbits and guinea-pigs. With patients he obtained rather inconclusive results and deplores the premature nature of the reports of the countess and her associates. A polemic of personalities by all four participants follows this paper, in which Selter lays significant emphasis on the fact that the mysterious copper-lecithin compound is advertised as prepared by the Farbenfabrik vorm. Fr. Bayer & Co.

More recently there has appeared another paper by von Linden,[3] which practically repeats the material given in her previous publication. Somewhat more definite details of some of the experiments are given, which only serve to emphasize the mild infection with which her guinea-pigs were suffering (the average life of the controls in the largest series was thirty weeks) and the fact that intercurrent epidemics so cut into her series that no comparative figures of any value can be obtained. On the basis of two analyses, without report of adequate controls or data, it is concluded that tuberculous tissues contain more copper than normal tissues. The influence of the reaction of the tissues and autovaccination by bacilli killed by the chemical, are also taken into consideration as factors in the chemotherapeutic success. Strauss[4] also has published another article on the subject of skin tuberculosis, reporting a favorable experience in seventy cases. The best results were obtained, he says, with "salves of a new chemical compound" made by the Farbenfabrik vorm. Fr. Bayer & Co., "according to a special process," which will be furnished to those interested "under specified conditions" which are not stated. These "compounds" consist of "inorganic or complex copper salts and lecithin." For general treatment "a complex copper salt" is recommended. No results were obtained with colloidal copper.

2. Selter, Hugo: Beitr. z. Klin. d. Tuberk., 1912, xxiv, No. 2.
3. Von Linden: Weitere Erfahrungen mit einer Chemotherapie der Tuberkulose, München. med. Wchnschr., Nov. 19, 1912, p. 2560.
4. Strauss, A.: Weiterer Beitrag zur Chemotherapie der äusseren Tuberkulose, München. med. Wchnschr., Dec. 10, 1912, p. 2718.

The application of the treatment results in considerable local reaction about the tuberculous lesions, which, it is suggested, may be an immunity reaction to products of disintegration of tubercle bacilli. In most cases both local and internal treatment with copper compounds, commonly combined with iodin-methylene-blue, was used. The results of all the cases are not described, but eight very favorable cases are reported, together with illustrations which would be more convincing if the photographer had not usually changed his background from dark to light in showing respectively untreated and treated cases, thereby reducing the prominence of any lesions present in the latter.

As experimental work in tuberculosis is very slow on account of the chronic character of the disease, it will be some time before extensive reports can be made of control investigations of the action of copper in tuberculosis, which undoubtedly have been begun in many laboratories. Since we have had some experience and results with copper compounds in their relation to tuberculous infections of laboratory animals, in experiments which were begun some time before the publication of the *Finkler Heilverfahren*, it seems desirable to present the main results in order that they may be available to those whose interest may be aroused by the German literature.

It may be briefly stated that in a considerable number of experiments with both rabbits and guinea-pigs, we have never observed copper compounds to produce any favorable effects on the course of tuberculous infections. The rabbits have been inoculated in one eye, which permits of especially favorable observation of the course of the disease. The guinea-pigs have been inoculated subcutaneously. Human tubercle bacilli have been used in all experiments. Our copper compounds have included copper sulphate, copper acetate, copper oleate and copper salts of amino-acids.

These have been administered both by feeding and by intramuscular injections begun at the time of inoculation, or at various intervals thereafter, and, in most experiments, pushed to the maximum dosage compatible with preserving the health of the animal. Analyses of both normal and tuberculous tissues have shown the entrance of the copper into the circulation and its deposition in the tissues including the eyes of the rabbits. Our figures have not shown any evidence of a tendency for the copper to accumulate in the tuberculous lesions in greater amounts than in the normal tissues, although apparently the copper does enter tuberculous tissues to some extent.[5]

We confess that these absolutely negative results were not anticipated, or at least we had hoped, from *a priori* reasons, that some encouraging results would be obtained, but we have seen nothing even suggestive of a favorable influence of copper on the experimental tuberculosis. Other experiments, of different nature, have failed to indicate any striking bactericidal action of copper compounds on the tubercle bacilli; on the contrary, we find copper salts to have surprisingly little effect on tubercle bacilli. To be sure, we have not had experience with the "complex lecithin-copper compound" made by the Farbenfabrik vormals Fr. Bayer & Co. We wrote to them for some of this material and received a letter to the following effect:

In reply to your esteemed letter permit us to state that it is impossible for us at present to place at your disposal the

5. The details of these experiments, together with others as yet incomplete, will be published eventually in the Journal of Infectious Diseases.

preparation for Finkler's treatment. Changes in the compound have become necessary, which are occupying us at present."

But it is to be questioned whether a lecithin mixture or "compound" should have any noticeable advantage over a copper salt of any high fatty acid, such as copper oleate, which has similar physical properties. In these days of immunity reactions lecithin is a *Schlagwort;* we can see no other reason for its preference over oleic acid as a vehicle for copper. There are sound physiologic reasons for expecting particular advantages for the copper salts of amino-acids, but as yet we have not been able to demonstrate any such advantages although we are conducting a systematic investigation of the properties of copper salts of various amino-acids.

We would not be understood as denying the possibility of favorable results being obtained by the use of copper compounds in tuberculosis. Our sole intention is to state that we ourselves have been unable to secure any appreciable effects in experimental animals, and that our experience is not in harmony with the experimental results described by the Countess von Linden, on which the clinical use of copper is based. We have made no clinical observations whatever.

PELLAGRA

WITH SPECIAL REFERENCE TO PATHOLOGY OF GASTRO-INTESTINAL TRACT*

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The changes that occur in the body during the progress of a disease are always of interest and vital importance, and it is worthy of note that from the earliest recognition of pellagra much attention has been given to its pathology. But in spite of painstaking work by numerous investigators, our knowledge of the subject is yet in a somewhat chaotic state. Following the lead of earlier writers, those studying the subject more recently have confined their observations largely to changes in the central nervous system, while the morbid condition of the gastro-intestinal tract, it would seem, has been given insufficient attention. The extent and severity of the lesions vary with the type of the disease present, as do also the symptoms arising from their presence. With our present state of knowledge it would hardly seem possible to decide whether the gastro-intestinal lesions or the changes in the nervous system were the primary or fundamental conditions.

CHANGES IN THE NERVOUS SYSTEM

Sandwith[1] found in certain cases degenerative changes in the spinal cord, most marked in the columns of Goll and Burdach, but in many other cases no pathology was evident. This absence of cord changes was explained by the fact that either these patients had suffered from the disease only a year or less, or they were apparently not far advanced, so that in his opinion cord degeneration, as discovered by the microscope, occurred late in the disease. From autopsies in cases in which the condition had existed for different lengths of time, cell degenerations were noticed in the brain cortex as well as in the lateral and posterior columns of the cord.

In a large number of autopsies done by Lombroso[2] and others, variable changes are recorded as present in brain and spinal cord. In some instances the weight of the brain was increased, in others diminished; in some hyperemia was present, in others anemia was noted. Degenerations of a fatty, pigmentary or calcareous type were present in the walls of cerebral capillaries. The pigmentation universally found in the sympathetic and spinal ganglia was considered an indication of marked nutritional changes in the central nervous system. The lesions found in the cord are described as being similar to those due to ergotism, their advance depending on severity of poisoning or lowering of resistance by intercurrent conditions.

Roberts[3] states that there is atrophy of the convolutions and in a majority of cases the weight of the entire brain is reduced, but that in many instances the weight is normal or increased. Hyperemia or anemia was noted, and also degenerative changes as mentioned above. Gross cord lesions were not very evident. The microscopic changes noted were degeneration of the direct pyramidal tracts and columns of Goll and Burdach, together with pigmentary degeneration of the cells of both anterior and posterior horns.

Spiller[4] has emphasized the point that the degeneration in the cord is not a systemic but a diffuse process, and so resembles a toxic degeneration and does not essentially differ from that in anemia, except that in pellagra the nerve-cells are more affected. He concluded that the cause must be some toxic or infectious agent acting on all parts of the central nervous system causing cellular degeneration as well as nerve fiber degeneration in the posterior and lateral columns.

CHANGES IN THE GASTRO-INTESTINAL TRACT

The changes in the gastro-intestinal tract seem to vary chiefly in degree, being more marked in the acute forms, but in all cases in which definite lesions exist, they consist of chronic catarrhal inflammation with exfoliation of epithelial cells and infiltration of stroma. Thrash[5] was in doubt whether or not this was a terminal condition as a result of the prolonged illness. He believes that the gastro-intestinal disturbances are secondary and due to the effort to excrete poisons ingested or formed from perverted metabolism and cell destruction. Atrophy of the muscular coats of the intestinal wall has been frequently mentioned [5, 6] as present in a large proportion of cases examined, and rarely anemia or hyperemia of gastro-intestinal mucosa, as well as chronic enteritis.

Tuczek[7] states that definite post-mortem results are found in the acute forms, typhus pellagrosus, in the form of chronic gastro-enteritis with formation of ulcers and swelling of mesenteric glands. This is associated with marked changes in the central nervous system and with general visceral involvement. Roberts[8] in studying the pathology of pellagra noted atrophy of the muscular coats of the stomach and in acute cases found a true gastritis. The changes found in the intestine seemed to depend on the duration and severity of the disease,

6. "Im Verfolg Ihrer werten Zuschrift gestatten wir uns Ihnen die Mitteilung zu machen, dass es uns gegenwärtig unmöglich ist die für das Finkler'sche Heilverfahren in Betracht kommende Präparate Ihnen zur Verfügung zu stellen. Es haben sich nämlich Aenderungen der betr. Verbindung notwendig gemacht, die uns augenblicklich noch beschäftigen."

* From the Pathological Laboratory, State Hospital No. 2, St. Joseph, Mo.

1. Niles: Pellagra, pp. 153, 158.
2. Marie: Pellagra, p. 262.
3. Roberts: Pellagra, pp. 142, 145.
4. Roberts: Pellagra, p. 152.
5. Niles: Pellagra, p. 159.
6. Marie: Pellagra, p. 269.
7. Marie: Pellagra, p. 274.
8. Roberts: Pellagra, p. 119.

consisting of atrophy of muscular coats and, in acute cases, of enteritis with ulceration, the latter chiefly in the colon and rectum.

The suggestion that the gastro-intestinal lesions found at autopsy are terminal and do not correctly represent conditions existing during life loses weight when we consider the clinical importance of symptoms from this source. The gastro-intestinal symptoms are the earliest,[9] most persistent and dangerous of all manifestations of pellagra. Their importance is emphasized by the fact that their presence together with the skin manifestation is essential to a clinical recognition of the disease, and also by the fact that the gastro-intestinal and skin lesions are sufficient for a post-mortem diagnosis. In studying the priority of symptoms in a series of cases, one is impressed by the large percentage in which gastro-intestinal disturbance is the cause of first complaint.

In the series of cases under my observation, the prominence and distressing character of symptoms indicating derangement of the gastro-intestinal tract were very marked and constant. This fact, together with the rapid course of the malady, would class these cases in the acute type, typhus pellagrosus, the chronic forms showing seasonal recurrences and less active manifestations of the disease.

Four of the fatal cases of pellagra in this institution came to necropsy. A brief report of these cases and post-mortem findings, with reference to lesions of the digestive tract, may be of interest.

CASE 1.—A woman, aged 57, had been in this institution continuously for the past nine years and for most of the time for the past twenty-two years. There was no history or evidence of a previous attack of pellagra. About June 1, 1911, characteristic skin lesions of pellagra developed on the back of both hands and wrists, together with marked stomatitis and excessive flow of saliva—evidence of acute intestinal disturbance—diarrhea and persistent abdominal pain. The case progressed rapidly and death occurred July 10, 1911. Necropsy was done twenty hours after death. Examination of the abdominal viscera showed intense congestion of omental and mesenteric vessels. The ileum, cecum and ascending colon presented a marked catarrhal inflammation, in some areas becoming hemorrhagic in character. Aside from the general hyperemia the rest of the gastro-intestinal tract appeared normal.

CASE 2.—A woman, aged 64, had been a patient in this institution for the past thirteen years, during which time her record gives no history of a previous attack. About July 10, 1911, typical lesions of pellagra appeared on the dorsal surfaces of both hands, rapidly extending over the dorsal surface of the fingers and completely encircling both wrists (Figs. 1 and 2). The border of the lesion was distinctly reddened and the line of separation from the normal skin was clearly marked. The lesions were dry with a tendency to exfoliation; about the wrists there were numerous fissures. Areas of similar character soon appeared on the forehead and on the left side of the neck (Figs. 2 and 3). The mucous membrane of the mouth and tongue developed a reddened glazed appearance and there appeared a constant, excessive flow of saliva, filling the mouth and escaping in a continuous tiny stream. There was also a diarrhea, intermittent in character and apparently uninfluenced by diet or remedies. Nausea and vomiting occasionally accompanied the frequent bowel evacuations. The stools were small, liquid, brownish in color, and gave reaction for blood pigment. No parasites were found. Urinalysis and differential blood-count showed nothing of interest. The Wassermann reaction and blood-cultures were negative. This patient showed marked mental enfeeblement, but dementia was not deepened after the development of pellagra. She was conscious and recognized friends who visited her a few hours before death on Aug. 7, 1911.

Necropsy was done five hours after death. The condition to attract attention on inspection of the abdominal viscera was the very intense engorgement of all mesenteric vessels, giving to the intestinal wall a strikingly reddened, purplish appearance. The mesenteric lymph-nodes were markedly enlarged and of a soft pinkish color, resembling inflamed lymph tissue. The mucosa of the lower quarter of the esophagus and of the entire stomach showed a catarrhal inflammation of varying degree. The duodenum was distinctly hyperemic, while the mucous membrane of the jejunum and ileum was markedly inflamed. This condition varied in degree and became more intense in the lower portion. Peyer's patches were swollen. The appendix appeared normal. The inflammatory condition extended to the cecum and for several inches along the ascending colon; areas of congestion were observed along the transverse colon. The mucosa of the descending colon, sigmoid and rectum was about normal. No ulceration was observed.

Microscopic examination of sections of the stomach wall showed superficial necrosis with extensive destruction and exfoliation of glandular epithelium, infiltration between the gland tubules, frequently hemorrhagic, with cystic dilatation of the gland tubules. The vessels in the submucosa were greatly dilated and atrophy of the muscular layers was noted. This destructive process was not so far advanced at the cardiac as at the pyloric portion, where necrosis and hemorrhagic extravasation were very marked. In the pyloric portion the deeper branching parts of the tubules retained their epithelium, but in the superficial portion this was shed off, leaving a structure composed of areolar tissue, infiltrated with round cells and showing superficial necrosis.

Sections from the duodenum showed superficial destruction of the mucosa, the villi being fused together in a structureless mass with beginning necrosis. Except for some remnants at the bottom of the crypts of Lieberkühn, all glandular epithelium was lost. Brunner's glands were not involved.

Sections from the jejunum showed similar superficial exfoliation, but the form of villus could still be seen. At the bases of the crypts there were small remnants of epithelium, but on the tips of the valvulae conniventes necrosis extended to the submucosa. The muscular coats appeared normal except for infiltration between the layers.

In the lower portions of the ileum there was almost entire destruction of the mucosa; only in areas were epithelial remnants seen, a narrow line of partially necrotic tissue being left to mark its location. The muscular layers were atrophied so that in this region the intestinal wall was extremely thin. Sections taken from the cecum and ascending colon showed a destructive process similar to that in the ileum.

CASE 3.—A woman, aged 40, was admitted to this institution in an advanced stage of pellagra. Skin lesions of pellagra extended over the dorsal surfaces of both hands and wrists; small areas were present on the back of the neck and on the left ear, and an extensive lesion involved the vulva and the entire perineal region, extending up the inner surfaces of both thighs. The mucous membrane of the mouth and tongue was universally reddened with a few superficial ulcers; the tongue was swollen, showing marked indentations from the teeth. An excessive flow of saliva filled the mouth and overflowed in a constant stream. Involvement of the digestive tract was further evidenced by abdominal pain, diarrhea and complete loss of desire for food. The diarrhea was constant and uninfluenced by treatment. Differential blood-count, Wassermann reaction and blood-culture were negative. Death occurred seventeen days after admission.

Necropsy was performed two and one-half hours after death. A hyperemic condition was noted in all the abdominal viscera. The mucosa of the esophagus was apparently normal. A catarrhal inflammation was present along the entire tract from the stomach to the cecum, most intense in the lower ileum and cecum, where there were many areas of submucous hemorrhage. The transverse and descending colon, sigmoid and rectum were about normal.

Microscopic examination of sections from the stomach wall showed superficial necrosis and exfoliation; the deeper portions of epithelium were still intact. The vessels were greatly

9. Roberts: Pellagra, p. 107

dilated and numerous small hemorrhages into the mucosa were seen. Sections taken from different areas along the jejunum and ileum showed the same loss of epithelium, with only small remnants in the bottom of the crypts. In some places the villi retained their form; in others they were fused into a structureless mass. The muscular layers of the ileum were greatly atrophied. Specimens from the colon appeared to be about normal, except that in the cecum the catarrhal inflammation was very intense.

CASE 4.—A woman, aged 59, had been a patient in this institution for the past three and one-half years, with no history or evidence of a previous attack of pellagra. About Oct. 1, 1911, there appeared on the dorsal surfaces of both hands and lower forearms areas of dermatitis resembling sunburn; other lesions appeared on the right shoulder and on the side of the neck, and, as exfoliation progressed, the dark, purplish color with brighter red border gave the typical appearance of skin lesions of pellagra. Diarrhea began in a few days and continued with only slight remissions. An almost constant

Fig. 1.—Patient, showing skin lesions encircling both wrists.

abdominal pain was complained of and a burning sensation, localized to the areas of dermatitis and to the mucous membrane of the mouth, was present, the sensitiveness of the latter interfering with the taking of food. The tongue and the mucous membrane of the mouth had the characteristic red, glazed appearance and there was present the same excessive flow of saliva. The feces were constantly liquid, of a brownish color and contained some mucus and varying amounts of blood. No parasites were found. Examination of the cerebrospinal fluid, differential blood-count and the Wassermann reaction were negative. Death occurred about two months after the first appearance of the disease.

Necropsy was performed fourteen hours after death. There were skin lesions on the dorsal surfaces of both hands, over almost the entire face and ears and on the right side of the neck and right shoulder. A condition of hyperemia of the abdominal viscera similar to that noted in the previous cases was present. The gastric mucosa was about normal. The intestinal tract from the duodenum to the hepatic flexure of the colon presented a catarrhal inflammatory condition of varying degree, quite marked in the duodenum and jejunum but most intense in the lower ileum and cecum, becoming hemorrhagic in some areas. The lower colon and rectum were only slightly affected.

Sections from the wall of the jejunum showed fusion of the villi into a necrotic mass and only the epithelium lying deepest in the crypts, intact. There was round-cell infiltration into

Fig. 2.—Same patient, showing lesions on dorsal surface of hands and fingers and on the forehead.

Fig. 3.—Same patient, showing lesion on left side of neck.

stroma of villi and between crypts. The muscular layers and the mucosa along the ileum were atrophied. This superficial erosion was not so marked in the cecum, but there was much extravasation of blood into the mucous membrane. The lower portions of the intestinal tract were only slightly involved.

In preparing the microscopic sections, tissue was taken from numerous places in the gastro-intestinal tract, so

that the findings would correctly represent the condition present. On the whole, the changes found were those of a chronic catarrhal inflammation, but in some areas the condition was very active and closely corresponded to the description given by Coplin[10] of hemorrhagic inflammation of mucous membranes. Many of the sections gave a picture very similar to his illustration of hemorrhagic colitis from colchicum poisoning.

These findings would seem to coincide with the theory that toxic products cause pellagra, whether taken with food products or of endogenous origin. In the cases observed, no probable causative factor in the food could be found.

A NEW ETHER-VAPORIZER

A PRELIMINARY REPORT ON THE TECHNIC OF INTRAPHARYNGEAL INSUFFLATION ANESTHESIA

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The vaporizer (Fig. 1) herein described was devised to supply certain deficiencies in preexisting types of vaporizers for insufflation anesthesia. These deficiencies are inaccurate knowledge of the amount of air passing and of the percentage of ether vaporized. The present vaporizer indicates at all times the amount of air passing and makes possible the mathematical control of the ether percentage. Only by such knowledge can control and accuracy of dosage be secured and the effect of a given dose be foretold. Otherwise the patient must be used as the primary index of the amount of ether being delivered.

The essential feature of this apparatus is a device whereby the total air delivered is at all times indicated. It consists of an inverted aluminum cup (1, Fig. 2) riding in a glass tube (2, Fig. 2) on a central rod (3, Fig. 2). This rides at increasing heights as the air-stream, flowing from below, becomes more forcible, and is comparable to the familiar glass ball riding on a water-jet in a shooting-gallery. The float is of such weight, and the air-delivery hole of such size, that the float begins to ride on a delivery of 8 liters (nearly 8½ quarts) of air per minute, and indicates with fair accuracy, by the increased height at which it rides, all passage of air up to 22 liters (about 23¼ quarts) per minute, which is the range of utility in insufflation anesthesia. The float registers by its average height not only the amount of air passing, but by its fluctuation the respiratory movement of the patient. It drops instantly on any stoppage of the air-stream, as for example by a kink in the tube.

On the glass tube which houses the float, is engraved, at convenient levels, the number of liters of air passed per minute. Also opposite each level is engraved the number of drops of ether necessary to add per minute to make the air-ether mixture 14 per cent. by weight, with the float riding opposite that particular level, and also the number of drops which would make a 1 per cent. mixture. The amount of air used is thus constantly visible, and may be controlled in volume by adjusting a pinch-cock on the air-delivery tube, while the percentage of ether may be adjusted to any amount desired by controlling the number of drops of ether added per minute.

10. Coplin: Manual of Pathology, p. 561.

The ether is held in a reservoir of 250 gm. (half a pound) capacity (*B*, Fig. 2), patterned after a standard high-pressure oil-cup, wherein the drop of ether (4, Fig. 2) may be seen and accurately controlled by a screw-valve (5, Fig. 2). The reservoir is filled from the top (6, Fig. 2), and thrown into air-circuit with the vaporizing-chamber by an air-valve (7, Fig. 2). It is mounted on the vaporizing-chamber (*C*, Fig. 2), a heavy glass cylinder, 4 inches by 4 inches. The ether drops onto the copper bottom of the vaporizing-chamber, which is kept at a temperature merely warm to the hand by a 4-inch electric stove (*D*, Fig. 2), with adjustable heat. In the absence of electricity the stove and bottom of the vaporizer may be immersed in a pan of warm water. The ether immediately vaporizes on this warm surface and diffuses into the air, passing through the chamber, the resultant being warmed to from 25 to 30 C. (77 to 86 F.)

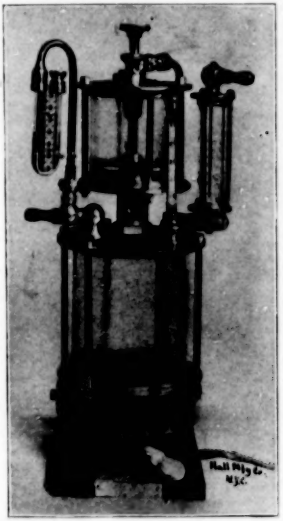

Fig. 1.—New ether-vaporizer.

A mercury pressure-gauge (*E*, Fig. 2), a thermometer (*F*, Fig. 2) and a safety-valve (*H*, Fig. 2) are mounted on the chamber.

The float has been calibrated by passing from a high-grade-test gasmeter accurately measured amounts of air, and registering each increase of 4 liters (4¼ quarts) per minute by a horizontal line on the glass tube housing the float.

The drop has been measured by repeated count, averaging under the condition of this vaporizer 29.3 drops per cubic centimeter or 41 drops per gram.

Knowledge of the amount of air which floats the aluminum cup at a particular level enables one to calculate the weight projected each minute at the cup. It is then a problem in simple arithmetic to arrive at the number of drops of ether to be added to the air-ether mixture whereby the percentage of ether-vapor by weight will be any selected amount.

Omitting the complex physical formulas and mathematical problems by which these results have been arrived at, and noting merely the results of the estimation: Dry air at 0 C. (32 F.) weighs 1.2928 gm. The conditions in the air used for calibration were those under which air would usually be delivered to the vaporizer: temperature at 22 C. (71.6 F.) under 30 mm. positive pressure and a water-vapor content of 1.5 per cent. by volume. Under these conditions the weight of air is 1.238 gm. per liter of air. If, for example, the float registers by its height the equivalent of 16 liters of air per minute, the equivalent in momentum of 19.84 gm. is projected at the float. Then to give 14 per cent. ether vapor, liquid ether running 41 drops to the gram, an amount of 114 drops of ether per minute would be added to the air-stream with the float at the 16 liter

level. The resultant of these calculations is registered on the scale from the 8-liter to the 22-liter level, so that the ether and air delivery can be adjusted to any desired total by volume, and any desired percentage by weight, by reading the figures and setting the air-current and ether drop accordingly. Similar calculations may be made for chloroform.

The heat needed for vaporization of the average ether used is about 15,000 calories per hour, and is provided not for the purpose of administering to the patient warm vapor, but merely to volatilize promptly the liquid ether. Air itself does not carry sufficient heat to ensure prompt vaporization, for in vaporizing 14 per cent. by weight of liquid ether, the mixture is depressed 47.5 C. (85.5 F.) Therefore external heat must be provided for control of ether vaporization and to prevent the precipitation of much useful moisture from the air by refrigeration. Any idea of delivering vapor to the patient above room-temperature must be abandoned as unfeasible, as the following experiment will show. Air (specific heat 0.2831), superheated 24 C. (43.2 F.) above room-temperature, that is 22 C. (71.6 F.) or to 46 C. (114.8 F.) and delivered through red-rubber tubing, flowing at a velocity of 18.4 linear feet per second, lost of the superheat 7° C. in the first foot, 5° in the second, 5° in the third and 4° in the fourth, being a total loss in four feet of 21° of the 24° of superheat. Of the remaining three degrees, two degrees more, or 23° in all, were lost by the eighth foot, and 23.8° by the fourteenth foot. These figures were obtained by observation of chemical thermometers inserted at 1-foot intervals along 14 feet of red-rubber tubing size 5/16-inch, wall 5/32-inch thick. The readings both for air and for 14 per cent. air-ether mixture covered a period of thirty minutes, during which no material decrease in the rapidity of heat loss was observed.

The ability to dose the patient accurately with air and with ether has rendered anesthesia by intratracheal insufflation by the Meltzer-Auer method, as developed for man by Elsberg, ideal except for the difficulties of intubation. It was to overcome the procedure of intubation that the pharyngeal method of anesthesia of Junker and others has been developed at the Roosevelt Hospital to a point where it has practically all the advantages with none of the complexity of intratracheal insufflation. The essential feature of this method is that a known quantity of air containing a known percentage of ether vapor is delivered into the pharynx, a quantity sufficient entirely to supply the need of the patient for air on inspiration, and of the lowest ether percentage which will hold that patient lightly and evenly anesthetized. Thus in the routine case light, even anesthesia is accomplished, and the possibility is avoided of negative pressure in the pharynx, which, by sucking back the mucus of the nose and mouth, is chiefly responsible for the "ether" pneumonia.

To exclude air from the outside which would dilute and render inaccurate the dosage of ether, an amount of from 16 to 18 liters (from 17 to 19 quarts) per minute must be insufflated in the adult. This amount can be delivered by a pressure of from 25 to 30 mm. through two small catheters, soft rubber, 16 F, passed one through each nostril of a patient in whom primary anesthesia has already been induced. The open end and double islet of each tube should rest in the lower part of the pharynx at a level of the epiglottis, a distance from the nasal orifice of about 12 cm. On expiration twice the usual amount of air is expired; that is, the tidal air from the glottis and the ether-laden air delivered through the catheters during this portion of the cycle. Hereby the mouth, nose and pharynx are kept free from mucus and from the blood of any operation on these parts, practically with the same efficiency as in intratracheal insufflation. The patient sleeps the same quiet sleep that marks intratracheal anesthesia. The jaw or head rarely has to be adjusted and may be twisted into position which in ordinary anesthesia would obstruct respiration, although not to the extent that may be done in intratracheal insufflation. The absence of so-called operative shock is notable, as with the intratracheal method.

Positive pressure on the respiratory tract may be obtained easily, by the anesthetist clamping the nose and lips of the patient with his hand until the cheeks bulge constantly and the air blows out continually between the fingers. Simultaneously the larynx must be firmly pressed back by finger or weight on the cricoid cartilage, blocking by pressure on the esophagus the ingress of air into the stomach. Positive pressure of from 5 to 25 mm., as gauged by a manometer in the pharynx, is thus easily maintained, and the patient continues to breathe smoothly. At about 10 mm. the excess of air blows out between the lips unless they be very tightly held. Greater pressure is unnecessary since 5 mm. is all that is required to prevent collapse of the lung in intrathoracic surgery. In the routine insufflation, the insufflated air is allowed to escape freely by nose and mouth. If air be swallowed or insufflated into the

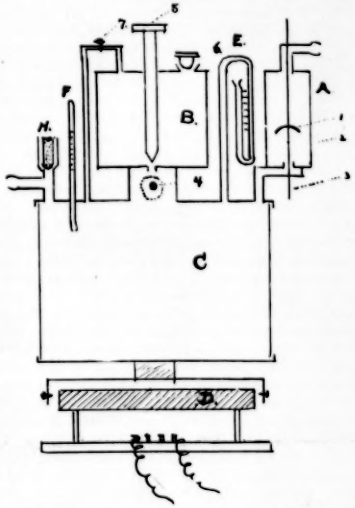

Fig. 2.—Working details of ether-vaporizer: *A*, air-indicator; *B*, ether-reservoir; *C*, vaporizing-chamber; *D*, electric stove; *E*, mercury pressure-gauge; *F*, thermometer; *H*, safety-valve; 1, inverted aluminum cup; 2, glass tube; 3, central rod; 4, drop of ether; 5, screw-valve; 6, opening for filling with ether; 7, air-circuit. Stock articles of commerce are chiefly used in the various parts on account of the cheapness and durability of such articles and the ease with which they may be replaced.

stomach the patients do not breathe smoothly, and higher percentages of ether become necessary to secure relaxation; but as practically no positive pressure is created in the pharynx in routine insufflation, blocking of the esophagus is necessary only in intrapulmonary work. The stomach does not become inflated with air unless one of the following two errors in technic has been made: The first error is to begin insufflation before the swallowing-reflex is abolished. The patient should be anesthetized primarily by a face-inhaler to the begin-

ning of surgical relaxation before insufflation is instituted. The second error is to pass the tubes into the beginning of the esophagus. The tubes should never be passed further than the following measurements: Mark off on the catheter the distance from the ala of the nose to the corresponding auditory meatus of that individual and insert the catheter only to that measurement which will carry it in behind the epiglottis but not into the grip of the esophagus. On the other hand, if the tubes be not passed into the lower pharynx, the air supplied is not freely available for inspiration.

For a few minutes after the introduction of the tubes it is well to hold the mouth closed and the jaw forward as one does with a face-inhaler. Soon, however, the stertor of the usual anesthesia quiets to a natural unobstructed respiration, and the jaw and mouth can be neglected. Usually, in fact, so smooth is the delivery and quiet the sleep that it would be perfectly feasible with this, as with the intratracheal method, for the operator to adjust the tubes and the air-ether delivery, and then proceed with the surgical operation without the presence of any anesthetist, as one does by insufflation on the animal in the laboratory of surgical research.

Patients take the same percentage of ether whether the ether is delivered copiously by the intrapharyngeal method, or by the intratracheal method. This percentage has proved remarkably constant on the average. A patient having first been placed under primary anesthesia to the stage of abolition of the pharyngeal reflex by a closed or open face-inhaler, the usual percentage by weight of ether necessary to maintain by insufflation, light, even, surgical anesthesia has proved for the first five minutes of surgical anesthesia to be 18 per cent., for the next twenty-five minutes, 14 per cent.; throughout the second half-hour, 12 per cent.; through the second hour, from 12 to 8 per cent. Alcoholics, athletic fat persons, thick-set negroes, certain patients at puberty, athletic young adults between 18 and 26 years of age, and patients requiring operative manipulation in the upper abdomen average 4 per cent. higher than this throughout the first half-hour, children and relaxed women run about 2 per cent. lower. Of course the quantity must meet the entire demand of inspiration, without dilution by outside air, for these figures to hold true.

In the average adult about 960 liters (a thousand quarts) of air and about 165 gm. (5½ ounces) of ether are delivered in the first hour of surgical anesthesia. Of the total vapor less than half is utilized to maintain a constant intrapulmonary ether percentage by being inspired; the rest is wasted through the expiratory and apneic period, doing work only to clear the upper air-passage. Rebreathing is not contemplated or countenanced in this method.

The air-supply at Roosevelt Hospital is from an efficient permanent equipment.[1] As a portable source, a foot-bellows with gas-reservoir is fairly satisfactory, as is a small motor-driven rotary blower.

Fuller details of pharyngeal insufflation, as applied to ether and to nitrous oxid-oxygen will be published soon, with tables of ether percentage required by man.

I wish to express my indebtedness to Drs. Charles H. Peck and Charles N. Dowd, on whose services at Roosevelt Hospital the methods herein described have been developed, and the ether-air requirements observed on a total of about 350 cases of intratracheal insufflation anesthesia and 250 cases of the intrapharyngeal type.

63 West Forty-Ninth Street.

1. Described in the International Hospital Record, November, 1912.

PERINEORRHAPHY WITH THE FIGURE-OF-EIGHT SUTURE

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The following method of suturing in cases of perineoplasty may not be original, though I have never seen it described. If, however, it is not new I feel that I need hardly make further apology for re-presenting so valuable a bit of operative technic.

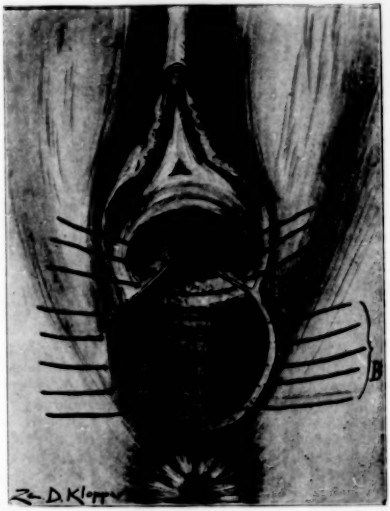


Fig. 1.—The figure-of-eight sutures at B unite the levator ani and perineus transversus muscles as well as the skin. The sutures at A approximate the cut edges of the vagina.

Fig. 2.—Transverse section of perineum showing how the inner (upper) loop of the figure-eight suture unites the ani muscles, and the outer (lower) loop unites the transverse perineus muscles and skin. The knot is on the skin surface.

In a thorough trial on all classes of cases I have found the results uniformly so much better than with the older methods that it seems to me a distinct advance.

The choice of a suture material for use in cases of perineal repair is of some moment, and second in importance only to the method of introducing the sutures. I have long since discarded absorbable material such as catgut and kangaroo-tendon on account of the uncertainty of absorption, varying tensile strength and low power of resistance to infection. Of the non-absorbable materials the so-called silkworm-gut, because of its uniform strength and pliability, makes the ideal

suture for this work. The extra large strands should be used and preferably those that have been dyed. They should be well softened in water before use.

METHOD OF INTRODUCTION

The vaginal sutures are passed and tied in the usual manner. In the perineum a figure-of-eight suture is used, the first bite of which catches up the levator ani muscles, and the second bite the transverse perineus muscles and skin. Care should be taken in tying these sutures not to bring them too tightly together, or they will cut deeply into the tissues and be difficult to remove. The tissues included within their grasp are to be just snugly approximated—no more.

The ends are left long and all sutures are removed on the tenth day.

ADVANTAGES

1. High percentage of primary union.
2. Perfect approximation with the obliteration of all "dead" space.
3. Fewer sutures with a consequent minimization of interference with nutrition to the tissues.
4. No buried sutures of uncertain strength and questionable sterility, with a low power of resistance to infection and an uncertain period of absorbability, but removable sutures of unquestionable strength, non-absorbable, non-infectible and absolutely sterilizable.

163 East Seventy-First Street.

THE CONGENITAL ABSENCE OF RIBS

REPORT OF A CASE WITH COMPLETE ABSENCE OF THE LEFT SEVENTH AND EIGHTH RIBS*

CARROLL SMITH, M.D.

ST. LOUIS

The congenital absence of ribs seems to be a rare condition. Supernumerary ribs, especially in the cervical region and less frequently in the lumbar region, are more often seen. Bicipital ribs are occasionally found and usually occur at the first rib.

The congenital arrest in the development of the ribs is more frequent than the arrest of formation or the complete absence of the ribs. The arrest of development is generally manifested at the costal cartilages and the anterior parts of the ribs. It does not occur at any constant level. The defect is generally unilateral, and the first rib is usually unaffected.

As a rule defects of the ribs do not occur alone. There is usually some corresponding failure of development in the vertebral column. The scapula, the muscles of the thoracic wall, and the pleura are also frequently involved. Scoliosis is often present. These patients are generally born with a straight spinal column, but later it becomes bent by muscular action, early in life or at the time when the patient begins to walk. Usually some axial rotation develops in the vertebral column, as well as compensatory curves in the lumbar and cervical regions. Pulmonary hernia may be present.

After a careful search of the literature I am able to mention nine cases showing the complete absence of one or more ribs. The titles of many articles are misleading. They imply that there is a complete absence, when only a defect of a rib is present. Few of these cases were subjected to an *x*-ray or post-mortem examination, so it is possible that non-palpable rudiments of ribs may have been present in some of them.

Packard[1] reports a case of a woman aged 39, with eleven ribs on each side. The post-mortem examination by Dr. S. W. Mitchell showed that the left fourth rib was broadened anteriorly and was united to the sternum by a broad cartilage, which was perforated by a round hole so as to indicate its normal double state. On the right side the fourth rib was broadened at the anterior end.

Gripat[2] describes an acephalic monster with nine ribs on the right side and seven on the left. On the right side the first rib was attached to the middle of the second rib by a ligament. The second and third ribs were united behind at the vertebral column, but were separated in front and attached to the sternum. The fourth and fifth ribs were formed in the same manner as the second and third. The sixth, seventh, eighth and ninth ribs were free anteriorly, but articulated normally with the vertebral column posteriorly. On the left side the first, second and third ribs were united posteriorly, and this common osseous structure was traversed by holes for the nerves. The fourth rib was twice the width of any of the others. The fifth, sixth and seventh ribs were separated and had no anterior attachments.

Gage[3] mentions a girl aged 17, with five ribs absent on the left side. The first, second, third, fourth and fifth left ribs were normal. The sixth rib was represented anteriorly by its costal cartilage which joined the fifth rib. No trace could be found of the left seventh, eighth, ninth and tenth ribs. The eleventh and twelfth ribs were normal. There were twelve dorsal vertebrae. There was no curvature of the spinal column at birth; but a scoliosis in the middorsal region, with the convexity toward the normal right side, developed about the fifth year. There was a compensatory curve in the lumbar region. The angles of the ribs were prominent on the right side, due to a marked horizontal rotation of the vertebral column. There were no other such cases in the family.

Gage[3] also mentions a case which was reported by Willet and Walsham to the Royal Medical and Chirurgical Society (in 1880). There were only five ribs on the right side and four on the left, and four and one-half dorsal vertebrae were absent. There was a lateral curvature of the spine with the convexity to the left, which they believed to be due to the absence of the right half of the third dorsal vertebra.

Sabrazès[4] reports the case of a girl aged 2, in whom the sixth and part of the seventh ribs were absent. The left first, second, third, fourth and fifth ribs were normal. The sixth rib was absent. The seventh rib was represented by a broad cartilage anteriorly. The eighth rib was composed of two bony rods side by side, which were fused together posteriorly. The cartilage joining these rods to the sternum anteriorly showed traces of being divided. The ninth rib was bound in front to the eighth by a thick cartilage. The tenth, eleventh and twelfth ribs were floating.

Murray[5] describes a patient aged 5, with complete absence of the eighth, ninth and tenth ribs on the left side. The left eleventh rib was smaller than the corresponding right rib, while the left twelfth rib was longer and larger than the right twelfth rib. The defect in

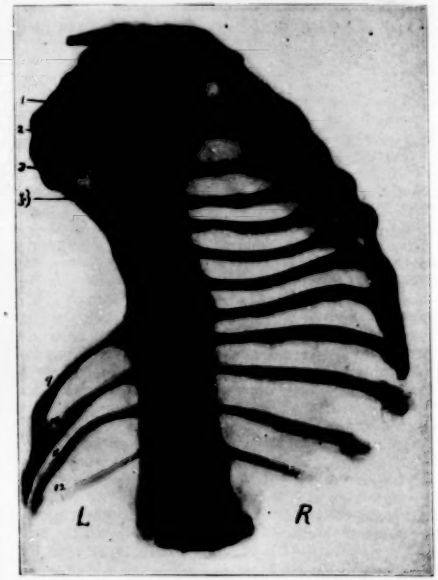
* Read before the St. Louis Medical Society, Oct. 19, 1912.
* From the Department of Anatomy, St. Louis University.

1. Packard: Proc. Path. Soc., Philadelphia, 1867, ii, 121.
2. Gripat: Bull. Soc. anat. de Paris, 1872.
3. Gage: New York Med. Jour., 1889, i, 650.
4. Sabrazès: Rev. de méd., 1894.
5. Murray: Tr. Clin. Soc. London, 1896, xxix, 252.

the thoracic wall between the seventh and eleventh ribs was 6.25 cm. wide in the axillary line.

Freund[6] describes an infant of 8 weeks, in which the right fourth, fifth and sixth ribs were found completely absent on palpation. There was a deep groove at the level of the left mamma, 4 cm. wide, extending from the sternum to the vertebral column.

Labbé[7] describes a full-term infant which died at birth. An autopsy showed twelve ribs on the right side. On the left side there were only eleven ribs. The fifth and sixth ribs were welded together, as were also the seventh and eighth. The infant also had an umbilical hernia, a congenital scoliosis, a spina bifida, bilateral congenital dislocation of the hips and club-feet, and there was an absence of the genital organs and bladder.



Skiagram showing congenital absence of ribs in an infant.

Gladstone[8] mentions a case in which the twelfth ribs were absent on both sides. The patient had seven cervical, eleven thoracic and six lumbar vertebrae.

In addition, I desire to report the following case:

L. R., female, aged 4 days, was brought to the outpatient department of the Alexian Brothers' Hospital on account of a deformity of the thorax on the left side. The infant was apparently otherwise perfectly developed. The baby had a transverse furrow just below the left nipple which extended from the vertebral column to the sternum. The flexed upper extremity fitted accurately into the depression. The area was covered by normal skin over a firm, fascia-like tissue. On respiration there was bulging and retraction of the thoracic wall over the defect, which was especially marked on crying. On careful palpation no signs of ribs could be detected in the defective region. The heart pulsation could be felt at the upper part of the depression. The right side was normal. The left arm was in no way abnormal, nor were any abnormalities found in any other region.

On the eighth day after birth the child died. A post-mortem examination showed the cause of death to be pneumonia. The entire bony and cartilaginous thorax was removed, as well as the thoracic and abdominal viscera, the left scapula, brain, cord and lower end of the humerus. The thorax was normal on the right side. On the left side the first, second and third ribs were normal, except that they seemed jammed together and compressed laterally. The fourth and fifth ribs were fused together. At the costochondral articulation this bony structure became broader and was attached to the sternum by two cartilaginous bands. About 1.5 cm. of the sixth rib, attached anteriorly to the same length of cartilage was found in the thoracic wall without any connection of the rib or cartilage to the vertebral column or sternum. The seventh and eighth ribs and their cartilages were entirely absent. The spinal column was defective on the left side at the level of the sixth and seventh ribs and was covered with smooth pleura at the place where these ribs should normally be attached. The ninth, tenth, eleventh and twelfth ribs were floating. The xiphoid process was bifid. A slight scoliosis, with the convexity to the right, was present in the spinal column at the level of the defective region.

The accompanying skiagram clearly shows the scoliosis, the defective vertebral column and the complete absence of any vestige of the sixth, seventh and eighth ribs at the posterior region.

Dr. Abraham Myerson examined the other specimens removed, and found a scaphoid scapula (Graves), a patent ductus arteriosus and an open foramen ovale. Microscopically, syphilitic periarteritis was seen in nearly all the viscera and a double central canal of the spinal cord was found in the thoracic region. The bones showed no changes. Levaditi's stain for spirochetes was negative. Dr. Myerson also made a careful study of the father, mother and six children of the family, and found undeniable evidence of a syphilitic taint in all of them. The father gave a positive Wassermann reaction. There were no such defects of the ribs in any of the other members of the family. This phase of the case will be made the subject of a special study by Dr. Myerson.

The etiology of such anomalies is obscure. Ballantine[9] states that "there is a large amount of evidence in favor of the view that some malformations of the chest-wall may be due to the pressure of the arm of the fetus in antenatal life." The muscles, mammary gland, nipple, subcutaneous fat and hair of the affected region may be involved in addition to the ribs. The hand, forearm and arm may also be defective. Ballantine believes that this association is explicable if the teratogenic cause be pressure.

Thomson[10] made a careful study of a series of cases with congenital arrests in the development of the ribs, and has pointed out that these defects do not correspond to anything in the normal course of development and cannot, therefore, be regarded as an arrest of the same nature as mesial fissure of the thorax or abdomen. Thomson also mentions that nearly all of the structures in the lower pectoral region are prone to be affected and in a manner having no relation at all to their vascular or nervous supply. This author was led, therefore, to the conclusion that "the fetus was so acted on *in utero* that its arm was kept for a long time pressed firmly against its side and that in consequence of this continued pressure, not only was the growth of the parts retarded, but the absorption of some of them was brought about."

6. Freund: Quoted from von Bergmann-Bull.: System of Practical Surgery, New York, 1904, ii, 449.
7. Labbé: Quoted by Legendre: Les Malformations costales par défaut, Thèse, Lyons, 1906, p. 53.
8. Gladstone: Jour. Anat. and Physiol., 1911-1912, xlvi, 220.
9. Ballantine: Antenatal Pathology and Hygiene, New York, 1905, ii, 148, 471.
10. Thomson: Teratologia, 1895, ii, 1.

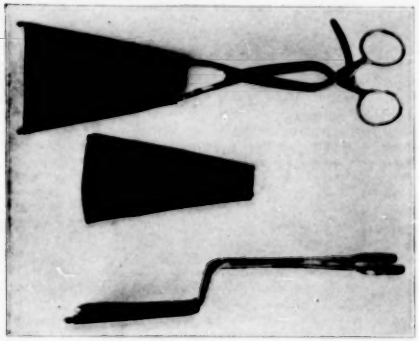
In the case which is here reported, the upper limb fitted accurately into the defect. The compression of the upper intercostal spaces and the fusion of the fourth and fifth ribs seem to indicate that pressure was present. The absence, however, of arm, forearm, or hand deformities, and muscle and breast changes, the presence of the scaphoid scapula, the double central canal of the cord, the patent ductus arteriosus, the fact that there seemed to be no attempt at development of the seventh and eighth ribs and the hereditary syphilitic taint, lead one to believe that the condition was due to an inherent defective development.

537 North Grand Avenue.

A VISCERAL DEPRESSOR

DAVID HADDEN, M.D., OAKLAND, CAL.

The illustration represents a device intended to take the place of the tablespoon or the trowel in the closure of the abdomen. The rubber web keeps the bowel from bulging to the side of the instrument and getting in the way, which occurs with the smooth metal depressor. Further, there is the



Abdominal depressor with rubber web.

greater advantage of being able to withdraw the instrument through a much smaller opening.

Used in the pelvis, being opened after insertion, it serves as an excellent retractor to hold the bowel back from the pelvic organs without force or the irritation of gauze. There is weight enough to have it retain its position. For this purpose, however, I am having made an instrument with only one bend, and that at right angles.

The rubber webs are replaceable, withstand boiling, and are moderate in price.

VISCERAL DEPRESSOR FOR USE IN CLOSING LAPAROTOMY WOUNDS *

L. MILLER KAHN, M.D., NEW YORK
Assistant Surgeon, Lebanon Hospital

The device illustrated is a simple cloth triangle with a hem on the two long sides to permit the introduction of the blades of a curved dressing forceps. The base of the triangle is 3½ inches and the sides 5 inches. At the apex is sewn a piece of tape, 10 inches in length. This tape is to be fastened to one of the finger-rings of the handle, so that the triangle will not slip from the blades. The purpose of the instrument is readily understood from the drawing.

When an abdominal wound is ready to be closed, the instrument (forceps blades adjusted into triangle) is inserted, the points of the blades carried within the peritoneal cavity and brought against the under surface of the parietal peritoneum. The blades are now separated as widely as possible. This puts the cloth diaphragm on the stretch, and while retaining the viscera, permits of easy suture of the peritoneum, and the danger of piercing or suturing intestine or omentum in the wound is obviated. The suture of the peritoneum is carried down to the lock of the forceps and the forceps withdrawn, leaving the diaphragm within the peritoneum. The diaphragm is now withdrawn through the small opening and one suture placed in the opening. The instrument entire may be withdrawn if the operator so wishes. The device has been found

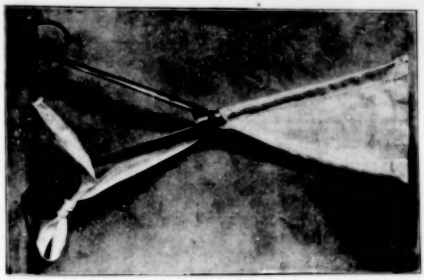


Fig. 1.—Blades of ordinary curved dressing forceps inserted into hems on sides of cloth triangle and tape tied to finger-ring.

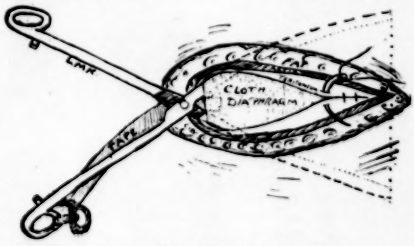


Fig. 2.—Visceral retainer inserted in abdominal wound.

very useful and much superior to the clumsy gauze pad used for the same purpose. One triangle is to be sterilized with each set of taped pads.

223 West One Hundred and Thirteenth Street.

A SUCTION HAND-VALVE FOR CLEARING THE OPERATIVE FIELD

EUGENE S. KILGORE, M.D., SAN FRANCISCO

The hand-valve here described, which is in use in the Students' Infirmary of the University of California, has proved a convenient addition to the suction apparatus for clearing blood or other fluid from the operative field, especially in throat operations.

Negative air pressure is secured by use of the ordinary filter-pump or ejector attached to a water faucet (Fig. 1). The carboy (*b*) is added to the system to give greater duration to the suction when it is being drawn on, air being pumped out of it for several minutes before operation begins. The mercury manometer, which hangs on the wall of the operating-

* Presented before the Section on Surgery, New York Academy of Medicine, Nov. 1, 1912.

room, is not necessary, but merely a convenience, as it indicates the amount of available negative pressure. The jar (*a*) receives all of the aspirated fluid, and none of the parts of the system beyond this has to be cleaned.

The purpose of the hand-valve is to conserve the suction in the intervals when it is not required, without the inconvenience of clamping the stiff rubber tubing. This saving of the suction, together with the reserve supplied by the carboy, allows a cumulative effect, which enables the small filter pump, with only a moderate water pressure, to exert during the moments of action a suction probably as vigorous as would be obtained with a steam-jet exhaust, a vacuum cleaner or one of the

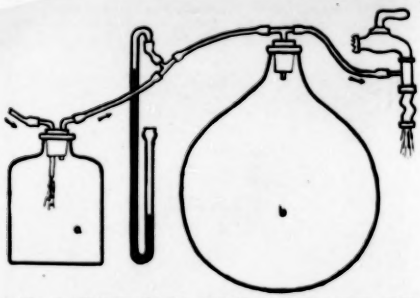


Fig. 1.—Diagram showing connections of filter pump, carboy, mercury manometer and receiving jar.

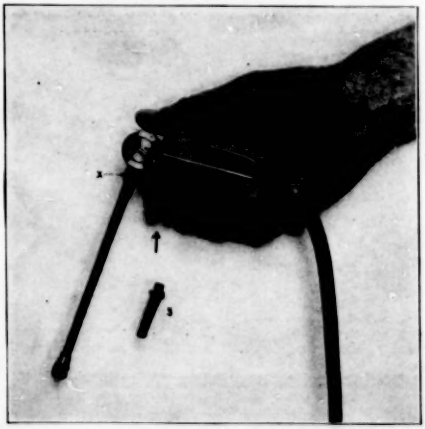


Fig. 2.—Suction hand-valve in use.

electric air pumps. It also prevents the effect of a constant air stream to dry matter on the inner walls of the tube. Its form is shown in Figure 2. The handle forms a spring which automatically closes the valve when it is released. When in use it is opened by slight pressure in the direction of the arrow. The handle is placed at a convenient angle with the tube, so that the hand which manipulates it need never come into the field of vision. The end of the aspirating tube is protected by a short perforated cap similar to the Blake tube, which effectually prevents such soft parts as the uvula or omentum from being entrapped in the end of the tube, blocking it and perhaps injuring the tissues. At *x* the tube can be detached from the valve and be replaced by the piece *y*. This is for attaching a catheter for use in the nostrils or elsewhere; or, through the medium of a short rubber tube, for attaching such convenient fixtures as those described by Kenyon and Pool.[1] There are no screws in the valve, and, for the purpose of cleaning, all parts, including the stop-cock, are separable by simple manipulations.

Most of the parts of the suction apparatus here described can be put together from materials easily obtainable anywhere. The valve can be obtained from A. B. Richter Co., Oakland, Cal.

University of California Hospital.

LEISHMANIOSIS (ORIENTAL SORE) OF THE NASAL MUCOSA

L. B. BATES, M.D., ANCON, C. Z.

The case here described is the fifth one of oriental sore which has been encountered in Ancon Hospital. As the pathogenic agent, epidemiology, histopathology and treatment of the previous cases have recently been described in detail,[2] I wish here only to record the unique feature of the case under consideration.

REPORT OF CASE

The patient, E. N., a Panamanian farmer aged 35, is a resident of San Carlos, Los Santos Province, Panama. His present lesions are of three years' duration. He is married and has six children. His wife, children and acquaintances are free from similar lesions.

Almost the entire length of the helix of the left ear is rather deeply ulcerated. The ulcer has the characteristic peripheral fossa and raised edges, and is entirely covered with a thick, hard, black crust. A similar condition, but to less extent, exists on the right ear and on the extensor surfaces of both elbows. The lower half of his nose is swollen to about twice its normal size and is indurated, the induration extending to both cheeks. The free margins of the alae nasi are deeply ulcerated and covered with hard crusts. Over the sternum there is a scar about 4 by 6 inches, on the lower edge of which are heavy crusts. There is a button about the size of a marble on the right shin. There is practically no glandular enlargement and the patient's physical condition is otherwise negative.

Smears from the ear and from the alae nasi stained with Hastings' stain, followed by Giemsa, showed a moderate number of typical *Leishmaniae tropicae*.

As leprosy was originally considered, a careful search in smears from both sides of the nasal septum was made. When the swab was applied to the nasal septum the nares were held wide open so that the swab did not come in contact with the alae. The septum was apparently very tender and commenced to bleed on the very slightest pressure. It was the same on each side. Smears from the septum showed many pus-cells and a moderate number of leishmaniae. In a smear from the right side an endothelial cell containing two of these bodies within the cytoplasm was seen. No acid-fast organisms were seen in smears from the nasal septum or from any other lesions. As the patient was sent to the hospital for diagnosis only and left before the examination of the slides was completed, we unfortunately did not get an opportunity to examine the nares by reflected light. Attempts have been made to find the man since his discharge but without success.

The tenderness of the nasal septum, the great ease with which it bled, the presence in smears from the nasal septum of pus-cells and endothelial cells in numbers, and the presence of typical *Leishmania tropica* in the cytoplasm of one of these endothelial cells make me feel that I am warranted in reporting this as a case with the leishmania lesion on the mucous membrane, although definite ulceration was not observed.

The report of but one other case of involvement of mucous membranes, that of Carini,[3] can be found in the literature at our command.

1. Kenyon and Pool: Surg., Gynec. and Obst., December, 1909.
2. Darling, S. T.: Oriental Sore in Panama, Arch. Int. Med., May, 1911, p. 581; Oriental Sore, Jour. Cut. Dis., December, 1911.
3. Carini, A.: Leishmaniose de la muqueuse rhino-buco-pharyngée, Bull. Soc. path. exot., Paris, May 10, 1911.

A SPECTACULAR CASE OF LIPOMYXOMA

HERMAN C. LITTLE, M.D., CHANGSHA, CHINA

Physician to the Yale Mission Hospital

History.—Patient, aged 24, monk, entered the Yale Mission Hospital, Changsha, China, Oct. 23, 1912, with tumor of the left side of the face and neck of ten years' duration. It began as a small nodule just below the angle of the left lower jaw and increased gradually to the size shown in Figures 1 and 2. Until three months ago the skin of the tumor remained intact, and except for a hypersensitiveness of the skin and tension due to the weight of the growth, there was very little pain. Three months ago the skin broke in two places shown in Figure 2, and since then has broken in several other smaller places.

Examination.—A large, nodular tumor, so heavy that it caused the patient considerable inconvenience, limited all movements of the head and neck, and had to be carried in his arms when he walked and held in his lap when he sat down. The skin was ulcerated in several places, the largest two being near the lower external aspect (Figure 2). These areas were discharging a foul blood-stained fluid. There were several small areas over which the skin was cyanosed and apparently preparing to ulcerate, beneath which the substance of the tumor was soft and in some places fluctuating. The tumor as a whole was hard and resistant. The skin over the sound parts was freely movable and entirely unattached. The growth was apparently only slightly adherent to the tissues of the neck, and the patient could move his head within a limited range while holding the tumor fixed in his arms or lap. There were no signs of metastasis. The attachments can be seen by the accompanying photographs.

The general physical examination was negative except for anemia of the skin and mucous membranes.

Operation.—The tumor was easily removed at operation and was only adherent to the parotid gland but not a part of it.

Tumor.—After operation the tumor was found to weigh 13.6 kg. (30 pounds). Its longest vertical diameter was 39 cm. (15⅓ inches), its longest horizontal diameter 30 cm. (11¾ inches), its horizontal circumference 62 cm. (24½ inches).

The tumor was encapsulated by a loosely adherent membrane. Cross-section revealed numerous cysts of various sizes, many of which were enclosed by walls of broken-down tissue.

Some of these cysts contained a thick greenish-brown fluid, others a semigelatinous material.

The largest cyst was in the center, as shown by the cross-section, Figure 3. The tissue which composed the hard, unbroken-down part of the tumor was fat, which was separated into lobules of irregular size and shape.

From the general macroscopic appearance of the tumor it was diagnosed as lipomyxoma.

The case is reported by permission of Dr. F. C. Yen, on whose service the patient was admitted and who performed the operation.

Fig. 1.—Front view of patient with lipomyxoma.

Fig. 2.—Side view, showing ulcerations.

Fig. 3.—Cross-section of growth showing cysts.

INFECTION OF PHARYNX BY THE ASPERGILLUS NIGER

FRANK A. CONLON, M.D., LAWRENCE, MASS.

The *Aspergillus niger* has been reported rather frequently as occurring in the outer ear, but, as far as I can find, after a careful search of the literature, it has never been observed previously in the pharynx.

My patient was a young man, 18 years old, whom I had been treating for chronic catarrhal otitis media. On inspecting his pharynx, I found it covered with a black glistening membrane which covered his whole pharynx and nasopharynx. This membrane was quite tough and could be lifted 4 or 5 mm. without rupturing, leaving an apparently normal mucous membrane underneath. A small part of this membrane was sent to the pathologic laboratory of the Boston City Hospital, where it was reported to be entirely made up of mycelium and spores of the *Aspergillus niger*. In spite of rather vigorous treatment, the *Aspergillus niger* could be demonstrated for weeks in the secretion of the pharynx. I find that infection by the aspergillus is rather a common disease in pigeon,[1] swan[2] and fowl.[3] It is a rather interesting point of etiology that two days before this membrane appeared the patient had been engaged in cleaning a hen-coop.

A USEFUL LAMPSTAND ATTACHMENT

E. M. BIXBY, M.D., POMONA, CAL.

As an illumination for eye work more directly above the patient than could be obtained from the Coakley lamp at the side of the table was needed, the desired result was secured at small cost by having a blacksmith drill a quarter-inch hole through one leg of the stand and put in a link of quarter-inch iron (Fig. 1).

Fig. 1.—Stand of Coakley lamp with iron link in position.

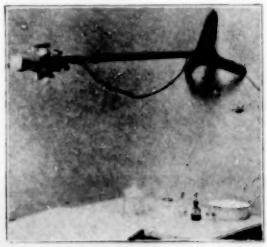


Fig. 2.—Lamp attached to wall over operating-table.

A stout hook was screwed in the wall at the proper height to bring the lamp about 18 inches above the table (Fig. 2).

The sliding extension and the pivoted yoke of the Coakley stand permit the lamp to be placed at any desired angle or to be pushed back out of the way while the patient is getting on or off the table.

1. Generali: Med. Veterinario, 1879.
2. Scholiskke: Schweiz. Arch. f. Thierheilk., 1887.
3. Kit: Deutsch. Ztschr. f. Thiermed., 1881.

Start an Active Campaign Against the Filthy Fly Now.—Procrastination has such influence over some of your neighbors that they will need to study over the matter months before they can make up what they call "their minds" to do something, remarks *Nature and Culture*. Springtime and flytime wait for no man or suffragette.

Therapeutics

NEURASTHENIA

It is not the purpose of this article to discuss the treatment of this disease in all its details, but the subject deserves more frequent consideration than it receives. Few words in common use among physicians are more difficult to define accurately than neurasthenia. Such descriptive synonyms as "nervous exhaustion," "nervous prostration" and "nervous breakdown" are often used. Whatever name is applied to it, the condition termed "neurasthenia," which was first described by Dr. George M. Beard in 1869, has been almost yearly increasing in frequency, until now it is a common condition.

The term "neurasthenia" is often used inaccurately and erroneously, and is applied to a variety of diseases ranging from incipient tuberculosis to commencing general paresis; even mild forms of mental disease have been mistaken for simple neurasthenia. The diagnosis of neurasthenia is like that of malaria and influenza, a cover for carelessness, actual ignorance or lack of care in physical diagnosis. Hysteria is also often interchangeably mixed with neurasthenia.

The diagnosis of this disease can be reached only by careful investigation and physical diagnosis through excluding more tangible conditions. The symptoms so frequently simulate those of beginning organic disease, arterial disease and cardiac debility that the exclusion of these more serious conditions is often difficult. The most common symptoms include indisposition for physical exertion, impairment of memory, incapacity for the usual mental work, insomnia, irritability, mental depression, pains and other sensory disturbances in various parts of the body, especially in the top of the head and in the neck and back, palpitation with sometimes shortness of breath, and disturbances of digestion, such as dyspepsia, flatulence and constipation.

The causes of nervous breakdown are many. Perhaps the most important is improper mental work, either due to long hours, or to working too many hours in one position, or in one room, or with bad air or poor light, or under the strain of some nervous irritation, either external or internal. Unrecognized internal irritations are frequently reflex, due to eye-tire, or due to some troublesome and ever-insinuating chronic or recurrent pain, although such pain may not be sufficiently severe to cause the patient to stop his work. Another internal nervous cause which is now being recognized both in school and in the selection of operators and clerks in the various works of life, is their mental aptitude for the work required. Not only the child and the boy and girl, but also the adult will work easily for many hours and many days and months without nervous tire, provided that the work is pleasing and done without internal mental friction, so to speak; whereas, if the same person is required to do work that is intensely disagreeable or for which he has no aptitude, he is prone to nervous breakdown, and to fail both in perfecting and improving his work. In other words, one person works best with one part of his brain, another best with another part of his brain; one works best intel-

lectually, another best with his eyes, another best with his brain mechanically directed, another best with fine movements with his hands and fingers, another with coarse movements of his hands and fingers, and still another best with larger muscle movements of the arms and legs. A person misplaced is prone to nerve-tire.

Another important cause of nervous breakdown is the combination of mental or physical activity, or both, with insufficient hours of rest, home worries, anxieties and the lack of home peace. In these conditions the person has no mental rest unless he is actually sleeping.

A frequent cause of neurasthenia, and one more frequently urged of late than formerly, is that of disturbance of the sexual functions. Some writers have even gone so far as to state that genuine neurasthenia is almost always due to abnormal sexual activity. This is certainly not true in this country, although there can be no question that sexual excesses, especially if abnormal, and sexual diseases and irritations are liable to cause as least temporary nervous breakdowns. It is easy to overwork this cause. A patient's fear that such causes are incurable and always lead to nervous breakdowns is harder for the physician to combat than the actual injury the patient has caused himself. Among the factors which present themselves for consideration in this connection are the effects of sexual excess and of total sexual abstinence, the most suitable age for marriage and the education of children in sexual hygiene. These phases of the subject are so broad as to demand separate consideration, and on some of them THE JOURNAL has already expressed its views. All must probably be taken into consideration, sooner or later, in the endeavor to prevent the ever-increasing nervous excitability and irritability of the age.

Another assigned cause of neurasthenia is the absorption of toxins, especially the putrefactive toxins produced chiefly in the intestinal canal. This cause is urged by those who believe in the uric acid irritation of the nervous system, that vegetarianism is a cure for all ills, and that anything which keeps the colon healthy will tend not only to keep the nervous system calm, but also to prolong life. Certainly this possible factor must be considered in deciding exactly how it is best to treat a patient with neurasthenia.

The various internal secretions are not sufficiently well understood for us to know how many of them, when imperfect, can cause nervous irritability. Hypersecretion of the thyroid gland is known to be an irritant to the central nervous system, but the causes of this hypersecretion are not sufficiently well understood. If this condition is diagnosed, it should be treated primarily, rather than the neurasthenia.

It is a fact that nerve-tire is increasing, and that it keeps pace with the increase in hypertension, arteriosclerosis and cardiovascular-renal disease. Neurasthenia is a disease of this rapid age; the growth of sanatoriums and private hospitals for the treatment of nervous breakdown is on the increase, and justifiably so, as these patients are better treated at these institutions than at home, if the institution is a reliable one.

In deciding that a patient has neurasthenia and not hysteria, hypertension and beginning arteriosclerosis, all other more tangible diseases having been excluded, the physician must make one of the most difficult of diagnoses.

Before considering the treatment of neurasthenia, we may rapidly enumerate what should be corrected to prevent the disease developing. These are: better school conditions than at present; more individuality in teaching children and in physical exercises for them; more hours of sleep for them; less filling of every hour of their days with some duty or entertainment, be it ever so simple; the early teaching of obedience and respect for the rights of others; the avoidance of societies, dances and teas for young children, and less of these for girls and boys before they are 18 or 19; the prevention, if possible, of pains from abnormal menstrual function in young girls; the correction of eye defects in all children and young people; and many other corrections of the incorrect things of young life which are recognized by every one and corrected by no one.

When the condition of neurasthenia is actually present, the treatment is, primarily, to remove all sources of nervous irritation, if possible, and to prevent and correct any physical disability, if possible. The food must be correct, the digestion must be good, and the bowels and condition of the intestines must be corrected, if defective. Next, the condition of the eyes must always be interrogated. Of this there is no question, and, even without headaches, a considerable proportion of all neurasthenic, nervous patients, and even hysteric patients, have eye defects that must be corrected before improvement will occur. Tea, coffee and other nervous stimulants should be withheld; sleep is an absolute essential and must be induced, but in the simplest possible way. And here comes the advantage of the private hospital or sanatorium, where proper hydrotherapeutic measures, massage, graded exercises, perhaps electricity, and rest on the Weir Mitchell plan, with all freedom from home frets can be carried out.

While private hospitals are urged as the best place to treat these patients, it should not be necessary for the local physician to lose the care of his patient. Every city of any size should have such an institution. It is essential to-day that such hospitals should be established, and it is not just that every such patient (and they are numerous and on the increase) should be sent to a distance, at great expense, and the local physician have no opportunity to treat him properly. The institution should carry out, with such expert advice as the physician decides that the patient requires, his orders as to which physical treatments, what rest, what diet, and finally what drugs, if any are needed, should be given the patient.

With proper food, proper rest, freedom from care, good air and proper physical treatments, especially hydrotherapy, the patient will generally sleep and improve more or less rapidly. If forced feeding seems advisable, it may be tried for a time, though hyperalimentation now is not often necessary. Circulatory aid is often needed, and small doses of digitalis are sometimes valuable in causing increased muscular, mental and nervous strength.

If sleep is not caused by hydrotherapeutic measures, the mildest simple hypnotics must perhaps be used for a short time. Sometimes half a teaspoonful of the fluidextract of an active ergot, taken at bedtime, will cause sleep, especially if there is a tendency to sleeplessness as soon as the patient lies down, while he is drowsy and sleepy if sitting up, this condition being a vasomotor ataxia.

If intestinal indigestion is present and bowel toxemia is diagnosed, the withdrawal of meat, the substitution of vegetables and cereals, and washing out the colon with plain water or physiologic saline solution, daily, or every other day for a short time, will generally relieve the condition. Constipation should, of course,

not be allowed. Such a stimulant of the nervous system as strychnin is rarely indicated.

Of the disturbances of the internal secretions, only that of the thyroid gland will be mentioned; the signs and symptoms of hypersecretion or hyposecretion should be studied, and if either condition is present it should be treated properly.

No matter how much improvement is noted or how well the patient may seem, neither the physician nor the family should be surprised at another nervous breakdown if the patient returns to the same environment in which he suffered the first. Therefore, to make such a cure more or less permanent, it is essential that the conditions that caused the breakdown should not be allowed to recur.

DISTURBANCES OF THE HEART*

(Continued from page 851)

SIMPLE HYPERTROPHY

Like any other muscular tissue the heart hypertrophies when it has more work to do, provided this work is gradually increased and the heart is not strained by sudden exertion. To hypertrophy properly the heart must go into training. This training is necessary in valvular lesions after acute endocarditis, and is the reason that the return to work must be so carefully graduated. When the heart is hypertrophied sufficiently and compensation is perfect, a reserve power must be developed by such graded exercise as represented by the Nauheim, Oertel or Schott methods. Anything that increases the peripheral resistance causes the left ventricle to hypertrophy. Anything that increases the resistance in the lungs causes the right ventricle to hypertrophy. The right ventricle hypertrophy caused by mitral lesions has already been sufficiently discussed. The right ventricle also hypertrophies in emphysema, after repeated or prolonged asthma attacks, perhaps generally in neglected pleurisies with effusion, in certain kinds of tuberculosis, and whenever there is increased resistance in the lung tissue or in the chest cavity.

The term "simple hypertrophy" is generally restricted to hypertrophy of the left ventricle without any cardiac excuse—the hypertrophy caused by hypertension and hard physical labor. It is well recognized that it hypertrophies with hypertension and with chronic interstitial nephritis. It also becomes hypertrophied when the subject drinks largely of liquid—water or beer—and overloads his blood-vessels and increases the work the heart must do. This kind of hypertrophy develops slowly because the resistance in the circulation is gradual or intermittent. In athletes and in soldiers who are required to march long distances hypertrophy generally occurs. This hypertrophy, if slowly developed by gradual, careful training, is normal and compensatory. In effort too long sustained, especially in those untrained in that kind of effort, and even in the trained if the effort is too long continued, the left ventricle will become dilated and the usual symptoms of that condition occur. Such dilatation is always more or less serious. It may be completely recovered from, and it may not be. Therefore a proper understanding of the physics of the circulation by the medical trainer of young men to decide whether or not one should compete in a prolonged effort, as rowing in a race, for instance, is essential. It is wrong for a single athlete to have an incurable condition occur from competition.

Sometimes simple hypertrophy of the left ventricle occurs from various kinds of conditions that increase the peripheral circulation. It may occur from oversmoking, from the overuse of coffee and tea, from certain kinds of physical labor, or from high-tension mental work. It is a part of the story of hypertension. Many times such patients as well as occasionally trained athletes, and sometimes patients with arteriosclerosis or chronic interstitial nephritis, complain of unpleasant throbbing sensations of the heart. Added to these sensations are a feeling of fulness in the head, flushing of the face, and possibly dizziness—all symptoms not only of hypertension but of too great cardiac activity. Various drugs used to stimulate the heart may cause this condition; when digitalis is given and is not indicated or is given in overdosage these symptoms occur.

The treatment is simply to lower the diet, cause catharsis, give hot baths, stop the tobacco, tea and coffee, stop the drinking of large amounts of liquid at any one time, and administer bromids and perhaps nitroglycerin, when all the symptoms of simple hypertrophy will temporarily, at least, disappear.

If the heart is enlarged from hypertrophy, if it is the right ventricle that is the most hypertrophied, the apex is not only pushed to the left, but the beat may be rather diffuse, as the enlarged right ventricle will prevent the apex from acting close to the surface of the chest. If the left ventricle is the most hypertrophied, the apex is also to the left, but the impact is very decided and the aortic closure is accentuated.

SIMPLE DILATATION

The term "simple dilatation" may be applied to the dilatation of one or both ventricles when there is no valvular lesion and when the condition may not be called broken compensation. Broken compensation has been sufficiently discussed. Dilatation of the heart occurs when there is increased resistance to the outflow of the blood from a ventricle, or when the ventricle is overfilled with blood and the muscular wall is unable to compete with the increased work thrown on it. In other words, it may be weakened by myocarditis or fatty degeneration; or it may be a normal heart that has sustained a strain; or it may be a hypertrophied heart that has become weakened. Heart strain is of frequent occurrence. It occurs in young men from severe athletic effort; it occurs in older persons from some severe muscle strain, and may even occur from so simple an effort as rapid walking by one who is otherwise diseased and whose heart is unable to sustain even this extra work. All of the conditions which have been enumerated as causing simple hypertrophy may have dilatation as a sequence.

The symptoms of heart strain, if the condition is acute, are those of complete prostration, lowered blood-pressure, and a sluggishly, insufficiently acting heart. The heart is found enlarged, the apex-beat diffuse and there may be a systolic blow at the mitral or tricuspid valve. Sometimes, although the patient recognizes that he has hurt himself and strained his heart, he is not prostrated, and the full symptoms do not occur for several hours or perhaps several days, although the patient realizes that he is progressively growing weaker and more breathless.

The treatment of this acute or gradual dilatation is absolute rest, with small doses of digitalis gradually

* EDITORIAL NOTE: This series of articles on "Disturbances of the Heart" will be issued in book form, in accordance with the desires of a large number of our readers from whom we have received letters. We will appreciate it if as many persons as possible order copies in advance, so that we may have some idea how many to print.

but slowly increased, and when the proper dosage is decided on, administered at that dosage but once a day. Cardiac stimulants should not be given, except when faintness or syncope has occurred, and if strychnin is used, it should be in small doses. The whole care, diet, massage and return to full work should be on the plan advised for a myocarditis following an acute disease. The heart may completely recover its usual powers, but subsequently it is more readily strained again by any thoughtless laborious effort. The patient must be warned as carefully as though he had a valvular lesion and had recovered from a broken compensation, and his life should be regulated accordingly, at least for some months. If he is young, and the heart completely and absolutely recovers, the force of the circulation may remain as strong as ever.

Sometimes the heart strain is not so severe, and after a few hours of rest and quiet the patient regains complete cardiac power and is apparently as well as ever; but for some time subsequently his heart more easily suffers strain.

ACUTE DILATATION OF THE HEART IN ACUTE DISEASE

It has for a long time been recognized that in all acute prolonged illness the heart fails, sooner or later, often without its having been attacked by the disease. The prolonged high temperature causes the heart to beat more rapidly, while the toxins produced by the fever process cause muscle degeneration of the heart or a myocarditis, and at the same time the nutrition of the heart becomes impaired either by improper feeding or by the imperfect metabolism of the food given; hence the heart muscle becomes weakened, and cardiac failure or cardiac relaxation or dilatation occurs.

The specific germ of the disease or the toxin elaborated by the specific germ of the disease may be especially depressant to the heart, as in diphtheria, or the germ may be particularly prone to locate in the heart, as in rheumatism and pneumonia. But all feverish processes, sooner or later, if sufficiently prolonged, cause serious cardiac weakness and more or less dilatation.

Just exactly what changes take place in the muscle fibers of the heart in some of these fevers has not been decided. Whether an albuminous or parenchymatous degeneration of the muscle fibers or a fatty degeneration occurs; whether there is a real myocarditis that always precedes the dilatation, or whether the weakening and loss of muscle fibers or a diminished power of the muscle fibers occurs without inflammation, dilatation of the heart is always a factor to be considered, and frequently occurs in acute disease.

While it is denied that acute dilatation can occur in a sound heart, at the latter end of a serious illness the heart is never sound, and acute dilatation can most readily occur, though fortunately it is generally preventable. When the dilatation occurs suddenly, as indicated by a fluttering heart, a low tension, rapid pulse, dyspnea and perhaps cyanosis with venous stasis in the capillaries, death is imminent, although such patients may be saved by proper aid. Even when the dilatation is slower, as evidenced by a gradually increasing rapidity of the heart and a gradually lowering blood-pressure, and with more evidences of exhaustion, death may occur from such heart failure in spite of all treatment.

Unless a patient dies from accident, as from a hemorrhage, from cerebral pressure or from some organic lesion in acute disease, the physician frequently feels that if he can hold the power and force of the circulation for several hours or days, the patient will recover from the disease, for in most acute diseases the patient has a good chance of recovery if his circulation will only hold out until the crisis has occurred or until the disease is ready to end by lysis. Therefore anything during the disease that tends to sustain, nourish, quiet and guard the heart means so much more chance of recovery, whatever else may or may not be done for the disease itself.

The best treatment of dilatation of the heart in acute disease is its prevention, and to prevent it means to recognize the conditions that can cause it. These are:

1. Prolonged high temperature. A short-lived temperature, even if high, is not serious. Prolonged temperature of even 103 F. or more is serious, and even that of 101 is serious if too long continued.

2. Exertion and excitement. Every possible means should be inaugurated to prevent muscular exertion and strain of the patient while in bed. Proper help in lifting and turning the patient should be employed, the bed-pan should be used, proper feeding methods should be adopted, and friends should be excluded so that the patient may not be excited by conversation.

3. Bad feeding. The diet should of course be sufficient for the patient and proper for the disease, but any diet that causes a large amount of gas in the stomach, or tympanites, is harmful to the patient's circulation, to say nothing of any other harm such as indigestion may do. All of the nutriments needed to keep the body in perfect condition should be given to a patient who is ill; in some manner he should receive the proper amounts of iron, salt, calcium, starch, protein, sugar and water.

4. Intestinal sluggishness. This not only means that tympanites should not be allowed, but necessary laxatives should be given. It would be wrong to prostrate a patient with frequent saline purgatives, but the bowels must move at least once every other day, generally better daily; and if the case is one of typhoid fever, they should be moved by some carefully selected laxative, and after the bowels have sufficiently moved, the diarrhea should be stopped by 1/10 grain of morphin, and the next day the bowels properly moved again.

5. Depressant drugs. In this age of cardiac failure heart depressants of all types, and especially the synthetic products, should be given only with careful judgment, and never frequently repeated or long continued.

6. Pain. This is one of the most serious depressants a heart has to combat; acute pain must not be allowed, and prolonged subacute pain must be stopped. Even peripheral troublesome irritations must be removed, as tending to wear out a heart that has all of the trouble that it can endure.

7. Insomnia. Nothing rests a heart or recuperates a heart more than sleep. Insomnia and acute disease make a combination that will wear a heart out quicker than any other combination. Sleep, then, must be produced in the best, easiest and safest manner possible.

8. A too speedy return to activity. The convalescence must be prolonged until the heart is able to sustain the work required of it.

The treatment of gradual dilatation in acute disease has been sufficiently discussed under the subject of acute myocarditis. The treatment of acute dilatation is practically the same as the treatment of shock plus whatever treatment must coincidently be given to a patient for the disease with which he is suffering. The treatment of shock will be discussed under a separate heading.

(To be continued)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

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SATURDAY, MARCH 22, 1913

ANIMALS AS CONVERTERS OF PLANT NUTRIMENTS INTO HUMAN FOODSTUFFS

There are numerous circumstances under which questions of economy in the use of foodstuffs need to be taken into consideration. The problem of the cost of production of our nutrients is one that appears to be growing in importance and seriousness from decade to decade. In the extensive use of animal foods, so common in most civilized nations to-day, it is rarely borne in mind that the production of this type of nutrient involves a conversion of plant food into animal foodstuffs — a transformation inevitably necessitating a sacrifice of considerable energy. The animal which devours the plant products requires no small proportion of the stored energy for its own maintenance, that is, its normal life processes; accordingly the residue available for the production of meat and fat or the secretion of milk, which may become available to man as dietary articles, must represent a correspondingly smaller portion of the actual nutrients originally stored in the plant ingested. One is, therefore, justified in asking to what extent it may be possible or desirable for mankind to attempt to avoid this intermediate waste of energy by making direct use in larger proportion of the plant products which are ordinarily converted to our advantage by the herbivorous animal.

In attempting to answer this question we must bear in mind the diverse character of some of the plant products which are ordinarily consumed by man and the plant-eating animals, respectively. The latter utilize such natural products as straw, grass, leaves, etc., which ordinarily form no part of the human dietary. An inspection of these products reveals at once their relative richness in cellulose and related substances, which are not rendered available to the human individual in nutrition, but evidently are not without some nutrient value to the animals which consume them. Probably the most important factor in enabling the herbivorous animals to utilize such materials as have been referred to lies in the part played in them by certain types of alimentary bacteria which exert sufficient solvent action on the cellulose envelopes of various types of plant materials to liberate their more digestible contents for the subsequent action of the digestive juices of the animal, and, perhaps, also to convert the insoluble and unavailable cellulose into fermentation products which may still have a certain degree of nutrient value in the organism. At any rate it is clear, from such experimental evidence as is available at the present day, that cellulose is disintegrated in the alimentary tract of herbivorous animals to an extent which never occurs in the digestive tube of man. The only comparable factor which can enable the human organism to liberate the foodstuffs from their impervious coverings in the cereals, etc., is the process of grinding and milling which brings about an extensive comminution of these products. To a certain extent this is also accomplished by effective mastication, which, however, is ordinarily efficient to only a small degree in rendering the texture of resistant foodstuffs satisfactory for good utilization.

It is interesting to note that all the vegetable foodstuffs which are easily digested by man are advantageously used directly in our diet. The ultimate value of animal production lies, in part, in the fact that it enables mankind to transform into more readily utilizable food products nutrient materials for which the human organism is not well adapted. It follows, therefore, that in order to furnish nutriment to the maximum population from the natural resources of the land, the more digestible vegetable products should be applied directly for the nutrition of man, whereas the more resistant ones should be converted to his use through the intermediation of the ruminating animals. The respective rôles of the two types of organisms ought to be borne in mind whenever conditions arise which call for a maximum utilization of the products of the soil for the maintenance of a large population.

HEALTH EXPENDITURES OF THE FEDERAL GOVERNMENT

One of the most interesting contributions to the discussion of the public health activities of the federal government is Senate Document 1072, which contains a summary of the expenditures of the government during 1912 for public health and medical purposes. The information in this document was collected in accordance with a resolution introduced by Senator Works of California, asking for a report on "the total expenses of the government for 1912 for health departments, bureaus and all other health activities in its various branches," together with the number of officers and employees engaged in such work. Secretary MacVeagh submitted a summary of the expenditures followed by a recapitulation by departments, which is reproduced verbatim as showing the exact amount of the expenditures of the federal government for health purposes.

This report is the basis for the newspaper statement that the national government is spending nearly twenty million dollars a year in public health work. But what are the facts?

Following the tabulation quoted herewith is a report from the secretary of each department, giving the items of the expenditures. These details throw considerable light on the work actually being done. For instance, how does the state department spend $36,000 for health purposes? Investigation shows that $19,999.28 of this amount was to meet the expenses of the Ninth International Conference of the Red Cross, held in Washington last year, while $10,163.64 was for the recent International Congress on Hygiene and Demography. Of the remaining amount, $2,830.55 was the annual share of the United States for the maintenance of the International Sanitary Bureau, and $3,015.62 was the share of the United States in the support of the International Office of Public Health, at Rome.

The $1,904,703.04 spent by the Treasury Department for health purposes was, of course, largely expended by the United States Public Health Service, $747,638.32

RECAPITULATION BY DEPARTMENTS

Departments and Bureaus	Expenses of Operation and Maintenance	Salaries and Other Compensation	Total Expenses	Number of Officers and Employees
State Dept.	$36,084.09	.....	$36,084.09	.....
Treasury Dept.	668,289.55	$1,236,413.49	1,904,703.04	1,507
War Dept.	2,875,574.56	2,838,516.13	5,714,090.69	4,521
Panama Canal	628,641.44	991,749.68	1,620,391.12	1,634
Soldiers' Home, Wash., D. C.	65,469.01	23,415.56	88,884.57	89
Nat. Homes for Disabled Vol. Soldiers	755,022.61	291,719.21	1,046,741.82	1,244
Navy Dept.	1,911,522.88	1,819,000.00	3,730,522.88	2,074
Interior Dept.	892,422.70	684,691.40	1,577,114.10	1,278
Dept. of Agricul.	347,225.60	3,551,977.28	3,899,202.88	3,159
Dept. of Commerce & Labor	44,739.83	95,060.03	139,799.86	98
Dept. of Justice.	32,598.18	9,953.00	42,551.18	28
Total	$8,257,590.45	$11,542,495.78	$19,800,086.23	15,632

being required for the salaries of the officers and employees and the traveling-expenses of the medical officers of the Public Health Service, while $14,892.80 went into the Hygienic Laboratory. The marine hospitals and care for the seamen of the merchant marine required $367,797.41. The federal Quarantine Service and the construction of quarantine stations cost $414,592.85, while the amount spent for preventing epidemic diseases in the United States, Porto Rico and Hawaii amounted to $326,057.38, plus $30,065.11 for the leprosy investigation station in Hawaii, making a total expenditure by the Treasury Department for health purposes of $1,533,256.46.

The Isthmian Canal Commission spent, last year, $1,620,391.12 for sanitation. Of this amount $956,275.01 was spent in administration and in maintaining hospitals and asylums, $35,861.36 in buildings and repairs, while the remainder, amounting to $640,879.53, was spent in sanitation and the disposal of garbage, street-cleaning, etc., in Panama, Colon and the Canal Zone.

The medical expenditures of the War Department ($5,714,090.69) are, of course, larger than those of any other department and are confined entirely to the work of the medical corps and the construction of Army hospitals. Likewise, the Bureau of Medicine and Surgery of the Navy spent $3,730,522.88. As the object of warfare, however, for which the Army and Navy exists, is to destroy rather than to save life, the expenditures of these departments can hardly be regarded as for public health purposes. The total appropriations for the medical services of the Army and Navy are $9,444,613.57, over half the total charged against public health work.

The soldiers' homes, which spent $1,135,626.39, and the Pension Bureau medical service, which cost $240,287.44, can hardly be regarded as established or conducted in the interests of public health. The Bureau of Indian Affairs of the Department of the Interior shows an expenditure of $395,388.71 "for health purposes." Yet the commissioner says in his report that the only specific appropriation available for sanitary work among the wards of the nation is an appropriation of $60,000 "for relieving distress and prevention of disease among Indians," which amount is, he adds, "wholly inadequate to meet the requirements of the service."

The Department of Agriculture has the second largest amount charged against it. The Bureau of Chemistry, for the enforcement of the pure food law, is responsible for $782,263.02, while the Bureau of Animal Industry is charged with $3,090,403.29. This bureau is given the credit of having been established for the protection of the health of the public, whereas it was established originally and is now conducted as a commercial bureau to increase the value of farm products.

In the Department of Commerce and Labor, the Division of Vital Statistics of the Bureau of the Census required $105,195.47. The Children's Bureau spent $9,128.01. The Department of Justice paid out for the care of the health of United States prisoners $42,551.18.

The only items in this schedule which can properly be charged against the public health activities of the government, as far as the United States are concerned, are $1,533,256.46 of the appropriation for the Public Health Service which is actually spent for public health purposes, the $782,263.02 spent by the Bureau of Chemistry in enforcing the Food and Drugs Act, and the $105,195.47 required to operate the Division of Vital Statistics of the Bureau of the Census. To charge the cost of international conferences, Army and Navy medical services, construction of Army hospitals, expenses of the Pension Bureau and the Bureau of Animal Industry and the sanitation expense of the construction of the Panama Canal as public health expenses is, of course, absurd. The fact is that instead of the federal government expending $19,800,086.23 last year for public health purposes, it actually spent $2,420,614.95.

It is also worthy of note that the only three bureaus in which there were bona fide health expenditures were

the Public Health Service, the Bureau of Chemistry and the Division of Vital Statistics, which are the identical bureaus which under the Owen bill would be transferred and made an independent health bureau.

Evidently the heads of departments at Washington under the late administration labored under the same error as some of our popular agitators, and confused medical treatment with health. The department proposed by Senator Owen is to be a health department and not a department for medical treatment. If this fact can be grasped, much confusion will be avoided both in the public press and in the seats of government.

MEDICINE AND THE LAW

"Every lawyer when young should be apprenticed to some good physician, and should return to him regularly through life," says Mr. G. M. Stratton[1] in contrasting the spirit of medicine with the spirit of law. In accepting this graceful appreciation our profession might reply as simply as did Mark Twain who, in responding to the toasts at a dinner given in his honor, said that never before had he heard compliments so beautifully expressed or so well deserved.

Stratton, speaking of the spirit pervading each of these professions, finds that lawyers as a body, in their professional work, are "of the backward look," while physicians keep pace with the advance of the natural sciences. The body of the law stands immovable, for it "represents the stability, the habit of our social life," as against the creative energy of reform. "Of two Rip Van Winkles awakening to-day, the physician would find his old methods as rust-eaten and useless as his instruments; the lawyer, after a few hours with new statutes, would feel at home in any of our courts." Too often the aim seems to be to play out a game with punctilious regard for all the rules, however minute, fantastic or technical, rather than to decide a weighty question with due sober respect for the grave human issues involved. Thus "an action for murder comes to nought because the complaint fails to state that John Smith slain was a human being." Then too, the lawyer passes through the school of advocacy. In practice he is ready to fight on either side. This robs not only the attorney but also the judge of whatever rounded view he might otherwise have of his larger social duty, his responsibility to the public. The object of medicine is not in conflict with other social needs. The physician does not heal one man at the cost of the health of another. The lawyer too often defends one man's rights at the expense of another's. "The individual lawyer is not free to put into operation some entirely new principle the value of which he may perceive; he is not free to experiment effectively," as is the physician. It is to offset the deadening influences of the lawyer's work that Stratton advises him to seek inspiration from medicine. By intercourse with the physician he may find the spirit which is lacking in his own profession.

Stratton's evident sympathy with the medical side of his contrast leads one to fear that he looks solely on the limitations of the one great profession and on the opportunities of the other. On that point, let the men of law speak for themselves. It would, of course, be most foolish to regard such a tribute to the spirit of medicine as called forth by personal merit, even that of the masters of the art. Yet the least among us, provided he be sincerely imbued with the spirit of his chosen work and earnestly devoted to its success, is entitled to feel pride as well as satisfaction in the fact that his task is to read the inexhaustible book of living Nature instead of the annals of the past.

1. Stratton, G. M.: Lawyer and Physician: a Contrast, The Atlantic Monthly, January, 1913, p. 46.

THE ENCOURAGEMENT OF MEDICAL RESEARCH

Prof. R. G. Hoskins of the Starling Ohio Medical College in Columbus has proposed a plan for the encouragement of medical research[1] which is intended to act as an incentive to competent workers who are not reached by the opportunities of the great research foundations or other scientific laboratories. The scheme aims to reward actual accomplishment without unduly favoring any one. It is suggested that the result could be achieved by the simple expedient of endowing the periodicals devoted to the publication of research so that contributed articles could be paid for according to their merit. Dr. Hoskins believes that such an arrangement would obviate what he considers to be, in many institutions, the most discouraging feature of research, the feeling that unusual effort, from a selfish point of view, is not merely futile but even detrimental, in that certain social and personal sacrifices are made without compensatory gain. We are told that the plan in operation would be simplicity itself. Rewards would go automatically to those who earned them. The difficulty of securing editorial boards fair-minded enough to decide the problems which would inevitably arise in this plan is admitted, although not regarded as insurmountable.

It is doubtless true that there are capable investigators who are not reached by the present organization of research undertakings in this country. We look with a certain misgiving on the tendency to divorce research from the universities and to segregate it in independent centers. There are many aspects to these broad questions and they cannot be settled by offhand judgments and haphazard opinions. But aside from this and admitting the difficulties under which even men of ability when isolated may struggle in an attempt to accomplish something worthy in the medical sciences, it is questionable whether the plan proposed could bring about the ends it aims to accomplish. The honorarium paid by some of the German publications to their contributors has tended to encourage quantity rather than

1. Hoskins, R. G.: A Plan for the Encouragement of Medical Research, Science, Feb. 21, 1913, p. 303.

quality of contribution in many instances, although it must be admitted that the cases are not strictly comparable with the standard proposed by Dr. Hoskins. There is an underlying error, we believe, in the attempt to measure the value of research by the publications submitted. Diligent, protracted investigation — the dictionary's definition of research — makes no pretense to furnish a product of specific value. Laborious study of the sort which brings what are commonly spoken of as "negative" results may have the utmost importance. Usually this lies in enriching the experience of the individual, in better preparing him for his further ventures, in paving the way for others so that they may avoid the errors of methods and the inadequacies of tested schemes. We are prone to overlook the value of such apparently unfruitful endeavors, though in truth they are often quite as important as a few striking positive findings. Negative findings do not always lend themselves to publication.

Present-day methods of administration tend to recognize and reward the man. The dissatisfaction which is voiced in such plans as we have been discussing will be overcome in part when the status of the man of science in this country is decidedly changed. Pecuniary awards are admittedly difficult of adjustment in science; but it is reasonable to expect for its devotees a greater social respect and public recognition than they are wont to receive. The respect and admiration of one's fellow man are potent factors in making the pathway of life more attractive. The popular estimate of the scientific worker is veiled in the thinnest humor in "The Food of the Gods," the fantastic story by H. G. Wells. "Quite ordinary persons, you perceive, outside their science. Or if anything on the unpractical side of ordinary. And that you will find is the case with 'scientists' as a class all the world over. What there is great of them is an annoyance to their fellow scientists and a mystery to the general public, and what is not is evident."

Science has contributed and is bound to contribute to the practical and utilitarian in the life of man, yet it is not and cannot be pursued as a mercantile affair. Modern physics is not cultivated as the servant of a steel corporation or an electricity monopoly. And similarly scientific medicine will continue to progress despite its inadequate rewards and its seeming inequalities of opportunity, because man's mind craves and finds satisfaction in the growth of human knowledge.

ANOTHER FUNCTIONAL TEST DISCREDITED

Another test for functional disorder in the organism has apparently come to grief. It has been known for some time that malignant growths contain an enzyme of the erepsin type capable of digesting protein beyond the proteose stage. This proteolytic power has been described as present in the gastric contents of cancer patients, where it was supposed to have been derived from cancer tissue and secreted into the stomach. An excellent method of detecting this digestive property was devised by Neubauer and Fischer in 1909 when they introduced the dipeptid glycyltryptophan as a test object. This compound is not split by pepsin; but other proteolytic enzymes can initiate hydrolysis and liberate the tryptophan, which is easily identified by means of a color reaction with bromin. Subsequently other tryptophan-yielding protein mixtures, such as the commercial "pepton" of Witte (which likewise does not yield amino-acids by treatment with pepsin alone) have been substituted in the functional test for the diagnosis of cancer. A large literature has already grown about this theme. For the most part it consists of statistical reports regarding the negative or positive outcome of the tryptophan test in normal cases or those suspected of carcinoma.[1] There has been no lack of critique in the matter, however. It is generally agreed that in the large majority of the cases of gastric carcinoma the stomach contents do show the power to hydrolyze the polypeptids as pepsin does not. But the possibility of a reflux of duodenal contents through the pylorus, carrying along the ereptic and tryptic enzymes from the intestine and pancreas, is an ever-threatening possibility, especially when, as in carcinomatous stomachs, the low gastric acidity favors such regurgitation.

A quite different source of error was brought out by Warfield in 1911. He discovered that saliva is capable of splitting glycyltryptophan so that it will give a reaction for tryptophan with bromin. If this is true — and it has been confirmed — there is no reason why the positive reactions obtained with the gastric contents in cancer, in which the acidity is notably low, should not be attributed to the admixture and "survival" of the peptid-splitting saliva swallowed. Thus the validity of the tryptophan test has been menaced from both ends of the stomach, by the entrance of intestinal contents at the pylorus and of saliva at the cardia.

Now, however, the further question has been raised whether in reality the reactions observed are due to a new enzyme in the saliva. Independent experimental investigations in the Mayo Clinic[2] and in the Sprague Institute for Medical Research[3] point to bacteria as the real source of the peptolytic reactions that have been described for saliva and consequently also for stomach contents containing the latter. Saliva suitably filtered and kept aseptic fails to exhibit this peptid-splitting behavior. Free tryptophan is occasionally met in saliva from dirty or infected oral cavities. The use of strong mouth-washes, such as the organic peroxids, results in a marked diminution of the peptid-splitting power ordinarily observed; while cultures of bacteria grown from

1. The literature bearing on the tests, etc., will be found compiled in the Archives of Internal Medicine, December, 1912, pp. 575, 576; also April, 1912, pp. 445, ff.

2. Smithies, Frank: The Glycyltryptophan (peptid) Splitting Agent in Human Saliva, Arch. Int. Med., December, 1912, p. 521.

3. Jacque, J. L., and Woodyatt, R. T.: The Peptolytic Power of Gastric Juice and Saliva, with Special Reference to the Diagnosis of Cancer, Arch. Int. Med., December, 1912, p. 560.

saliva often readily produce the typical reaction of the test. These facts all point to microorganisms as the source of the cleavage power, which is accordingly due to the unfilterable agents. According to Jacque and Woodyatt, normal gastric juice, free from blood, pancreatic secretion and bacteria, has no peptolytic power. The same holds true for cases of benign subacidity. These authors state that in about 88 per cent. of developed cases, carcinomatous stomach contents show a peptolytic power decidedly greater than the maximum seen in benign conditions in general; so that the detection of this power may after all be of some value in the diagnosis of cancer. In any event it is essential to eliminate bacteria by the passage of the gastric specimen through an effective filter, with subsequent aseptic precautions. The newly described facts must nevertheless serve to diminish the confidence which has hitherto been bestowed on the tryptophan test.

EXAMINATION FOR FEEBLE-MINDEDNESS AMONG IMMIGRANTS

The problem of the feeble-minded is one that presses insistently for solution. Among the important phases of this problem not the least is that of the detection of the feeble-minded among immigrants. New York, being the portal of entrance of the greatest number of immigrants, is most immediately affected by this problem. The New York State Board of Charities, in a recent report to the governor, calls attention to the inadequate facilities for caring for the thirty thousand defectives in the state, among whom are many immigrants or the children of immigrants. There are facilities for taking care of only six thousand. The commissioner of immigration and many of the medical men and inspectors in the immigration service at the port of New York have laid stress on the inadequate force and appropriation for detecting and excluding the feeble-minded among immigrants reaching that port. It has also been asserted, as pointed out in a recent editorial,[1] that the training of many inspectors is not of such specialized character as to enable them to pick out, with the greatest possible degree of accuracy, the feeble-minded among immigrants.

J. G. Wilson of the United States Public Health Service,[2] located at Ellis Island, also calls attention to the lack of trained men and interpreters and a place for them to work, and the failure of Congress to provide adequate funds for these purposes. Wilson points out, moreover, the insufficiency of any particular method of determining feeble-mindedness among immigrants. He says that, even though the essential phenomena of feeble-mindedness be the same among all races, it does not follow that these can best be elicited in all cases by identical methods. The differentiation of the high-grade feeble-minded individual or moron from the person of average intellectual capacity is made more difficult by the fact that we have no entirely satisfactory understanding of what really constitutes a moron. To say that a moron is a person whose intellectual development is permanently arrested somewhere between the ages of 8 and 12 years seems definite, but when applied to immigrants is open to the objection that the standard of intelligence and of knowledge varies with the different races. To this difficulty are added those arising from the differences in language and the racial point of view as to life's problems, which make it hard to differentiate between the moron and the ignoramus among the immigrants.

Although Wilson believes that the Binet-Simon test is sufficiently accurate when applied to the diagnosis of feeble-mindedness in those who have been brought up in an environment similar to that of the persons among whom Binet's original experiments were conducted, and that as modified by Goddard it may be applied to Americans, he finds that it is not an infallible test for feeble-mindedness among immigrants. He believes that we should be extremely cautious not to confound dense ignorance with inherent mental incapacity. He cites as an instance a 20-year-old immigrant farm laborer with no schooling, who could not read or write and who failed in the 7-, 8- and 9-year-old Binet-Simon tests, but who, when asked a series of questions which came more nearly within the range of his experience, answered them all perfectly although many involved both intellectual and moral judgments. Wilson found that the man was normal but that his powers of observation and his constructive imagination had lacked opportunity for development. Wilson found also that Healey's rack test and Fernald's test, which are in the form of puzzles, designed to bring out the perception of the relationships of forms and of the individual's ability to profit by the experience of repeated trials, could not be relied on to differentiate between the normal and abnormal in all instances; many immigrants otherwise found to be normal failed in these tests.

Wilson therefore believes that every artificial aid to determine mental ability must be used with great caution and be considered only as an adjunct to a general examination which considers the reaction of the individual to his environment under all circumstances. Any tests applied should have an air of familiarity about them. The diagnosis of feeble-mindedness must be established by careful weighing of all the evidence which every reputable method of examination can furnish, such as the Binet-Simon tests, the Di Sanctis tests, the apparatus of Healy, Fernald, etc.; but the examiner should always bear in mind the fact that what he really desires to determine is whether or not the alien is lacking in one or more mental traits which will make it impossible for him to assume his normal relations to society. All of this emphasizes the importance of time,

1. The Problem of the Feeble-Minded Among Immigrants, editorial, THE JOURNAL, Jan. 18, 1913, p. 209.
2. Wilson, J. G.: The Diagnosis of Feeble-Mindedness Among Immigrants, Boston Med. and Surg. Jour., Feb. 13, 1913, p. 226.

of adequate facilities and of a sufficient force of specially trained and experienced inspectors, if such effective showing is to be made in the detection of the feeble-minded who seek to enter our country as the great importance of the question demands.

Current Comment

CLEAN ADVERTISING—A HOPEFUL SIGN

The fight THE JOURNAL and some lay publications have made against fraudulent medical advertising seems to be making fair progress toward success. Each year additional newspapers and magazines have joined this campaign for decency and truthfulness. Now there has arisen a new power from which much may be expected. This force, to which we referred recently,[1] is an organization known as the Associated Advertising Clubs of America. It has over 10,000 individual members, and includes many advertisers who operate on a national scale. The organization has what it terms a National Vigilance Committee which was created "to wage war on dishonest advertising." This committee, through its chairman, Mr. H. D. Robbins of New York, has for some time past been in correspondence with THE JOURNAL office for the purpose of obtaining reliable information regarding medical frauds. Many individual advertising clubs in different parts of the country, component parts of the Associated Advertising Clubs of America, have their own local "vigilance committees" whose duties are similar to those of the national committee but applied to local rather than national problems. Readers of THE JOURNAL will, we believe, read with gratification the following resolutions, adopted by the National Vigilance Committee of the Associated Advertising Clubs of America:

WHEREAS, The American Medical Association has rendered a great service not only to the medical and pharmaceutical professions, but particularly to the public at large in the investigation of fraudulent quacks and nostrums and in its publication of pamphlets exposing the unworthy; therefore be it

Resolved, That the National Vigilance Committee of the Associated Advertising Clubs of America in convention assembled at Cleveland, November 23, hereby expresses its hearty appreciation and thanks to the American Medical Association and pledges to that Association the utmost measure of active assistance which lies within its power to render. In turn it asks, knowing that it will receive, the active cooperation of the American Medical Association in its particular task of eliminating from all decent publications or other means of reaching the public eye, all announcements of unworthy, dishonest or fraudulent medical advertising.

The power that such an organization as the Associated Advertising Clubs of America can wield is far greater than that possessed by any publication. Those of us who have been fighting for decency and truth in advertising have been able to bring to bear only the powers of moral suasion. We could say to the newspapers that are carrying fraudulent medical advertisements: "These things are frauds. They are frauds for reasons that we are able to give you. May we not suggest that you reject such advertisements?" But the national advertisers, naturally have greater influence. They can say to the newspapers: "We purchase thousands of dollars' worth of space in your paper every year. Our products are clean; are sold under no misrepresentation and are, in fact, in every sense legitimate merchandise. We protest against having our advertisements appear in company with advertisements of products that are vicious or fraudulent, or both. We believe that such a juxtaposition is to the detriment of the honest product. The public has become critical. In suspecting, or realizing, that certain advertisements in a given newspaper are fraudulent, doubts are likely to be raised as to the genuineness of all other advertisements in the same paper. We, therefore, have decided to place our advertising with such newspapers only as exclude all fraudulent matter." If this attitude is taken by the purchasers of large advertising space it will result in the segregation of objectionable advertisements. There will doubtless be some sheets that are willing to accept the offscourings, but in the nature of the case, the influence of such mediums will be self-limited.

1. A New Force Against Fraudulent Advertising, Current Comment, THE JOURNAL A. M. A., Jan. 25, 1913, p. 291.

PROFESSIONAL FEES AND WEALTHY PATIENTS

Fees for professional services are generally determined by the value of the services and the wealth of the patient. The justice of the first condition requires no argument. Various reasons have been given in defense of the second. Some are valid. Others are plainly subterfuges. It has remained for one of the best-known members of the New York bar to advance an explanation founded on both law and equity. Speaking at a medical dinner recently, Hon. W. Bourke Cochran said that the sea law of salvage should apply on land as well as on sea. The New York *Times* gives this extract from his remarks:

Now you all know that when a mariner comes on a wrecked vessel and saves it he is entitled to a fee for salvage. And that fee is fixed not according to the trouble it was to him to make the salvage, but according to the value of the goods salvaged. That is the law to which we must look to judge the surgeon who performs a major operation on a rich man.

Whether Mr. Cochran's theory is good law or not is for his legal confrères to determine. It is, however, a new and ingenious justification for a practice which has long existed.

DANGEROUS GLUTEN FLOURS

The fraud and deception to which an unfortunate portion of the public is subjected in the purchase of so-called foods for diabetics has been commented on before. In the Propaganda for Reform Department this week we discuss a few of the most widely advertised of these products. In some cases, the manufacturers of these preparations are plainly to blame. They know that the stuff they sell is dangerous for the diabetic, and when national or state laws have forced them to modify their claims, they have done so in such a way as to continue to violate the spirit of the law while grudgingly obeying the letter. Other manufacturers, we believe, have been misled by those who should know better—physicians. As a large share of the responsibility for

the proprietary evil rests, in its final analysis, on the medical profession, so, unfortunately, does much of the blame for the frauds perpetrated in the name of gluten and diabetic foods. We believe that it is no exaggeration to say that four physicians out of five conceive "gluten flour" to be a flour from which practically all the carbohydrates (starch, sugar, dextrin, etc.) have been removed. That such is not the case is due in part to the wretched standard promulgated by the federal government, but physicians can do much to offset the harm done by the government's low standard. Very few people purchase gluten flours or foods except on the recommendation of a physician. It thus becomes the duty of every medical man to make plain to his patient that in the present state of the law the term "gluten flour" means little or nothing to the diabetic and that the essential information to be sought before purchasing such flours is the carbohydrate percentage. The law should demand that every package of gluten flour should have printed on its label its carbohydrate percentage—a requirement no honest manufacturer could object to. If this were done it would be a great step toward the protection of sufferers from diabetes. No flour containing over 10 per cent. of carbohydrates is a safe flour in a well-marked case of this disease. There is possibly a place in commerce for flours containing 40 or 50 per cent. of carbohydrates, to be used by those whose starch-tolerance is below par or by those who are suffering from a transient glycosuria, but no flours containing such high proportions of carbohydrates should be sold as safe products for the use of diabetics.

THE PRACTICAL VALUE OF BIRTH-REGISTRATION

The practical value of a birth-certificate has often been commented on. A recent criminal trial in North Carolina shows the importance of such records. In the case of the State versus Goodlake, the question of the guilt or innocence of Goodlake depended on whether a girl was or was not 14 years old. It was admitted that she was over 13, but it was claimed that she was not yet 14. How was this point proved? In a state which had had modern birth-registration for fourteen years, this would have been easy. The court would have called for a certified copy of the girl's birth-record. But in North Carolina there has been no birth registration. How could the court ascertain the facts? An old family Bible was found with a record of the child's birth; the monthly report cards of her school-teacher were introduced, and the teacher identified her records, and an old negro nurse testified as to the age of the child. Family Bible records are known to be loosely kept, entries often being made months or even years after the events. The school-teacher's records were only corroborative, while the "black mammy's" recollections after thirteen years were practically worthless. But the jury decided that the girl was 14 years old and sent Goodlake to the penitentiary for eight years. We know nothing of the merits of the case, of the guilt or innocence of the accused, or of the justice or injustice of the verdict. But for a modern, civilized state to have to resort in court to such methods to prove the age of one of its wards is supremely absurd. Evidently the people of North Carolina have come to the same conclusion, as the state legislature has just passed the model bill for the registration of births and deaths. After this law is once fairly in working order, such occurrences as those which marked the Goodlake trial will be impossible. Illinois, Iowa and Tennessee have the same measure before their legislatures, and it is hoped it will become a law in each of these states.

VITAL STATISTICS AND HEALTH CONDITIONS AS AN ADVERTISING ASSET

It has been the custom in the past for resorts with a favorable climate to advertise their "pure air" as an inducement to tourists, invalids and settlers — making use, in so doing, of "hot air," or just ordinary "blowing." Now that the value of climatic conditions with reference to health can be more correctly estimated, mere statements as to natural advantages in the way of springs, air, sunshine, etc., do not carry such weight. Something more definite must be presented. Health conditions in city or resort, to be regarded as an asset for drawing visitors or permanent residents, must be based on actual figures, and many places now vie with each other in that respect. The Manitou Springs Hot Iron Club, a commercial organization, in order to attract visitors and residents, circulates a letter calling attention to the vital statistics and morbidity record of that city, as compiled by the city physician. This is a rather novel idea. As the health of its inhabitants is the best business asset which any place can have, it is good business and good advertising for business men's associations to call attention to the actual figures with reference to their city in this manner.

STATE SUPPORT OF MEDICAL EDUCATION

Slowly but surely state legislatures are coming to see the necessity of providing more generously for the support of medical education. In the twenty-seven states that have state medical schools all but two, or possibly three, have provided in some way for the support of those schools. In several states this support is by a specified per capita tax. In others, means are provided for the state university, the university being left free to expend that money as it likes for the medical as well as for the other departments of the university. Still other states make direct appropriations for the medical school. Two states which have recently made appropriations for medical education are Arkansas and South Carolina. The legislature of the former has just appropriated $36,000 for the medical department of the state university.[1] In the latter the legislature has recently converted the Medical College of South Carolina, Charleston, into a state institution and has appropriated $10,000 toward its maintenance. Other states are making more liberal appropriations than heretofore, as shown by reports from Indiana,[2] where the annual appropriation for the medical school has been increased to $75,000, and in Oregon, where a larger appropriation ($45,000) for the medical school has just

1. News Department, this issue.
2. News Department, Feb. 22, 1913, p. 606.

been reported.[3] Two state medical schools which at present are not receiving support from their state legislatures are Georgia and Illinois. The medical department of the University of Georgia has recently undergone a remarkable development through funds provided by the citizens and city of Augusta. In order that it may continue that splendid development, however, it should receive generous support from the state. In Illinois, if the state university medical school is to be satisfactorily developed, it also must receive ample support from the state. In several other states medical education has reached a critical period, which makes it urgent that the state appropriations be generously increased. In Nebraska, for example, although the state has already provided for college buildings for the state university medical school on the new campus in Omaha, it is quite urgent that the state should immediately provide sufficient funds for the greatly needed university hospital. In West Virginia, if the state university is to conduct a medical department, appropriations for that purpose should be sufficiently large to permit that department to be developed in a worthy manner. In Kansas, although large sums have been appropriated in the past, additional sums are needed for the further development of the school. The time is past when a medical school can be properly conducted on the income derived from students' fees, even though they be exorbitant. The medical school which is to furnish a training in modern medicine must of necessity have a corps of full-time, thoroughly qualified teachers to whom salaries must be paid, and there must be four or more large extensively equipped laboratories which not only require an original outlay of thousands of dollars but also require large sums for their maintenance. The same is true also regarding the development and maintenance of the medical library and the medical museum, which are essential adjuncts to the modern medical school. Altogether this requires an income far in advance of that required only two or three decades ago when medical teaching was largely by didactic methods. It is because of this largely increased expense that private, unendowed medical schools are rapidly disappearing, leaving the responsibility for the training of physicians to state universities and to well-endowed institutions. In order that the state universities may have medical schools worthy of being called state institutions, it is essential that they receive generous support from the respective legislatures. The states which grant such support will thereby insure for those commonwealths better-trained physicians who can better cope with the complex problems of sanitation and public health and at the same time furnish more skilled care for those who have need of a physician's services.

UNAPPRECIATED EFFORTS OF COMPETENT OFFICIALS

The rapid development of medical education brought about during the past several years has shown in marked contrast the great need for better laws regulating the licensing of physicians and of better methods in the enforcement of such laws as are already enacted. Those who are striving for such improvements, however, have a decidedly up-hill road to travel. This is particularly true regarding the work of efficient executive officers of state licensing boards. Too often this position is so interwoven with politics as to make effective work exceedingly difficult. On the other hand, there is much evidence of very efficient work, and in several instances this work has been done under exceedingly difficult and trying circumstances. Often the board is not getting ample funds with which to do effective work. Again, the efficient officer soon finds that the first fruits of his efforts are kicks, curses and abuse, not only from those whose questionable practices are curtailed by the enforcement of the law, but often also from some to whom he had looked for sympathy and moral support. Some of these officials have, with little or no salary, neglected their private practices and fought the people's fight against quacks, incompetents and frauds, sometimes carrying on the work almost single-handed. How discouraging it must be, therefore, for one of these officials to find that apparently his work has not been appreciated by the public or by many of the medical profession, and to learn also that some of the latter have even sided with his enemies! A year or so ago we referred in these columns to the persistent fight made for fair standards of licensure in Colorado[1] and again to the work in North Carolina.[2] During the last year or two an equally effective fight has been carried on in Kansas by Dr. H. A. Dykes, the able secretary of the licensing board, who successfully prosecuted several notorious quacks, even with the seriously limited funds at his disposal. It is a question whether he had the support which he should have had either from the medical profession or from the people of that state. Anyone who was not a persistent fighter like Dr. Dykes would long ago have said "What's the use?" It is very desirable that the medical profession, at least, should give efficient state officials its hearty and effective support, and that all forces should unite in the campaign for better safeguards against unprincipled and swindling quacks, as well as against incompetent and untrained practitioners of medicine.

3. News Department, March 8, 1913, p. 757

1. Dec. 16, 1911, p. 2018.
2. Jan. 13, 1912, p. 120.

Medical News

ARKANSAS

Little Rock

Medical School Gets Appropriation.—An official notice says that the Arkansas General Assembly has just appropriated $36,000 for the Medical Department of the University of Arkansas for the biennial period ending March 31, 1915.

ILLINOIS

Medical Block for Rockford.—The erection of a six-story building on North Main Street near State, to cost $150,000 and to be occupied by physicians and dentists, is being considered by the professional men of Rockford.

Dispensary for Elgin.—At the meeting of the advisory board of the United Charities of Elgin, March 4, Dr. A. L. Mann, city physician, was asked to bring to the attention of the city commission, the matter of establishing a free dispensary for the poor of Elgin.

Sanatorium Notes.—A tuberculosis sanatorium is to be established two miles west of Springfield where a ten acre tract of land has been purchased as the site. Dr. George T. Palmer and Hon. Thomas E. Lyon consummated the deal.——The National Sanatorium and Springs, Freeport, which succeeded to the property of the White Sanatorium Company a year ago, is reported to have made an assignment for the benefit of creditors, March 10.

Personal.—Dr. E. G. Wilson, Kankakee, has been appointed local surgeon for the Chicago, Indiana and Southern Railway.——Dr. Louis Ostrom has been elected president, Dr. G. L. Eyster, vice-president and Dr. J. C. Souders, secretary-treasurer of St. Anthony's Hospital, Rock Island.——Dr. J. De Silva, Rock Island, has resigned as a member of the State Penitentiary Board.——Dr. F. M. Ingalls, for eighteen years a practitioner of Highland Park, has disposed of his practice and expects to leave early in May for Sacramento Valley, Cal.——Dr. John Deal, Jr., Riverton, has returned from abroad and will open an office in Springfield.——Dr. Theodore S. Proxmire, Lake Forest, has been placed in charge of medical work at Fort Sheridan during the absence of the regular staff.

Chicago

Personal.—Dr. and Mrs. Emanuel J. Senn have returned after several weeks in New Orleans.——Dr. Haim I. Davis, recently appointed county physician, assumed charge, March 13.——Dr. Joseph Shanks has been elected chairman of a committee for the establishment of a free dispensary on the northwest side of the city.

Bequest to Mercy Hospital.—By the will of the late Ferris H. Thompson, New York City, who died in Paris, February 18, Mercy Hospital and Orphan Asylum, Chicago, receives a bequest of $100,000 and a contingent bequest of $200,000 on the death of the widow of the decedent. The bequest is to be used for the erection of a five-story, fire-proof building as a home for nurses.

Tuberculosis Study Circle.—The third meeting of the Tuberculosis Study Circle of the Chicago Tuberculosis Institute was held March 21 at the City Club. Dr. W. A. Gekler, superintendent of the Indiana State Tuberculosis Hospital, Rockville, spoke on "Treatment of Pulmonary Tuberculosis with Artificial Pneumothorax," and the discussion was opened by Dr. Ethan A. Gray.

IOWA

New Society Organized.—Eleven practitioners of Perry met in the office of Dr. S. P. Free, recently, and organized the Perry Medical Society.

Must Report Typhoid and Tuberculosis.—On March 1, the compulsory registration of cases of typhoid and tuberculosis began in Des Moines. Printed blanks for reports have been furnished physicians.

Personal.—Dr. E. H. Hazen, Des Moines, who was operated on recently at Mercy Hospital is making steady progress toward recovery.——Dr. H. A. Minassian, Des Moines, who was operated on recently at Mercy Hospital for appendicitis, is ill with pneumonia, but is reported to be doing well.——Dr. A. J. Hunter, Oskaloosa, has suspended practice and gone to Havre, Mont.—Dr. F. C. Mehler, New London, in honor of his semi-centennial of practice, was given a banquet in Burlington, February 14. Dr. J. Fred Clark presided.

KANSAS

New Medical Society Organized.—The faculty and students of the University of Kansas Medical College, Rosedale, organized a medical society, February 21, with an initial membership of sixty and elected Dr. Arthur E. Hertzler, Kansas City, president, and Dr. C. A. Doty, secretary.

Appropriations for State Institutions.—The Kansas legislature has appropriated $49,500 for a tuberculosis sanatorium in the northwestern part of the state, and $55,000 for the new buildings for the Larned State Hospital in addition to the unexpended balance made by the last legislature.

Personal.—Dr. James A. Barker, National Home, has been appointed chief surgeon of the Mountain Branch Soldiers' Home, Johnson City, Tenn., vice Dr. J. C. Butler, resigned.——Dr. S. A. Bass, Wichita, fractured his right arm while cranking his automobile, March 7.——Dr. J. H. Guinn, Arkansas City, announces his intention of discontinuing practice and of removing to Long Beach, Cal.——Dr. W. L. Jacobus, Ottawa, was operated on for appendicitis in the University Hospital, Kansas City, recently.——Dr. B. F. Slusher, Hutchinson, fell from his buggy recently, fracturing his forearm.

KENTUCKY

New Officers.—Hart County Medical Society at Munfordville, March 4: president, Dr. J. W. Craddock, Bonnieville; secretary, Dr. Dodson, Rowletts.

Personal.—Dr. Henry C. Kehoe, Flemingsburg, has been elected secretary of the State Institution for the Feeble-Minded, vice Dr. G. W. Armes, Frankfort, resigned.——Dr. J. D. Clardy, Hopkinsville, is reported to be critically ill.

New Hospital.—Physicians of Pikeville have organized a stock company and let a contract for the building of a twenty-five room brick hospital. Drs. W. J. Walters, M. Pinson, W. A. Campbell, Z. A. Thompson and J. W. Vicars are among the promoters.

MARYLAND

Senator Wires Hospital.—Senator William P. Jackson has authorized Dr. Bryce W. Goldsborough, chief of the staff of the Cambridge Hospital, to have the hospital wired for electric lights at his expense. He will also pay for improvements in the *x*-ray department of the hospital.

Personal.—Dr. and Mrs. Cecil Dabney, Sherwood, have started for China where Dr. Dabney is a medical missionary of the Protestant Episcopal Church.——Dr. G. Hampden Richards has been elected mayor of Port Deposit.——Dr. William H. Welch, Baltimore, is still ill with gout.

Baltimore

Hospital Asks Increased Endowment.—Johns Hopkins Hospital is asking increased endowment to meet increased demands and outlay. Additions to four public wards and a new building for eye, ear, throat and skin diseases are contemplated as well as enlarged dispensaries.

MICHIGAN

New Officers.—Dr. Sara T. Chase has been elected secretary-treasurer of the Traverse City Antituberculosis Society.——Dr. Herman Ostrander has been elected president; Dr. J. B. Jackson, a vice-president, and Dr. S. R. Light, treasurer, of the Kalamazoo Antituberculosis Association.——The Michigan Health Officers' Association at its recent meeting in Ann Arbor, elected Dr. Guy L. Kiefer, Detroit, president; Drs. T. J. Langois, Wyandotte; T. M. Koon, Grand Rapids; A. F. Fischer, Hancock, and Edward Goodwin, Bay City, vice-presidents, and Dr. R. L. Dixon, Lansing, secretary-treasurer.

Hospital Notes.—At a joint meeting of members of the Poor Commission of Detroit with representatives of the Detroit hospitals, March 1, it was decided to ask for $600,000 for the construction and equipment of units of the various existing hospitals for the care of the sick poor.——A new hospital is to be built in Jackson through the efforts of the Jackson County Medical Society. The building will be of brick construction, fire-proof, three stories in height and will cost $100,000.——At the Eloise Tuberculosis Hospital there are fifty men and four women being treated, the male section being overcrowded while there is much waste of space on the female side. It is proposed to take as many male patients from the Detroit Tuberculosis Hospital as that institution will take females from the Eloise Tuberculosis Hospital, thereby limiting the accommodation of the latter institution to men and increasing its capacity at least fourteen beds.——The new tuberculosis sanatorium for Flint County is ready for occupancy. The institution is for advanced, indigent cases only.

MINNESOTA

Personal.—Dr. George D. Haggard, Minneapolis, has been appointed assistant quarantine inspector.——Dr. J. E. Engstad, Minneapolis, who was operated on recently at the Deaconess Hospital in that city for the removal of gall-stones, is reported to be making satisfactory progress toward recovery.

New Members of State Boards.—Governor Eberhard has appointed the following members of the State Board of Health: Drs. O. J. Hagan, Moorhead; Charles Lyman Greene, St. Paul, and Frank Bailor, Minneapolis.——Drs. F. B. Hicks, Grand Marais; D. J. W. Andrews, Mankato, and Charles H. Bolsta, Ortonville, have been reappointed members of the State Board of Medical Examiners.——Dr. W. J. Mayo, Rochester, has been reappointed a member of the State Board of University Regents.

Wesbrook Accepts British Columbia Presidency.—Frank Fairchild Wesbrook, dean of the College of Medicine of the University of Minnesota, has announced his acceptance of the presidency of the University of British Columbia, Vancouver,

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and expects to assume active duties by the middle of May. The institution over which he is to preside does not yet exist, excepting in the endowment of two million acres of provincial land and the earnest efforts of the people of British Columbia. Its material embodiment is a campus, well wooded, at Port Gray, near Vancouver. No buildings as yet have been erected nor has a faculty been appointed.——Dr. Wesbrook was the guest of honor at a banquet, February 12, given by the senior class of the medical school at which Dr. W. A. Jones presided as toastmaster. In response to the toast "Graduation," Dr. Wesbrook said: "You should help to lead the movement in this country whereby the medical profession will change its relationship to society as a whole. To a knowledge of medicine should be added a knowledge of statesmanship. If you do not take this step voluntarily and map out your own plan, somebody will do it for you."

MONTANA

New Officers.—Fergus County Medical Society at Lewistown, March 4: president, Dr. A. C. Biddle, Lewistown; secretary-treasurer, Dr. A. W. Deal, Butte.

State Sanatorium Ready.—The Montana State Sanatorium for Tuberculosis, Warm Springs, recently completed at a cost of $45,000, is now ready to receive patients. The institution consists of an executive building with two wings, each accommodating eight patients, and six cottages, each of which is equipped for two patients, but can, if necessary, accommodate twice that number.

NEBRASKA

Personal.—Dr. Maul, pathologist at the Hastings State Hospital, has accepted a position in the University of Denver.——Dr. W. D. Guttery, Pilger, has been appointed first assistant physician at the Norfolk State Hospital.——Dr. W. S. Fast, St. Joseph, Mo., has been appointed superintendent of the State Institution for the Feeble-Minded, Beatrice.——Dr. M. W. Baxter, Hastings, has succeeded Dr. W. B. Kern, Hastings, as superintendent of the State Hospital, Ingleside.——Dr. L. B. Pilsbury has been appointed assistant superintendent of the Lincoln City Hospital.

New Officers.—Jefferson County Medical Society at Fairbury, February 27: president, Dr. J. S. Taylor, Steele City; secretary-treasurer, Dr. A. J. Coats, Fairbury.——Harland County Medical Society at Orleans: president, Dr. William L. Sucha, Orleans; secretary-treasurer, Dr. Samuel M. Baker, Alma.——Fair County Medical Society at Hebron: president, Dr. Rudolph F. Decker, Byron; secretary-treasurer, Dr. Henry Hebron (reelected).——Custer County Medical Society at Broken Bow: president, Dr. J. H. Morrow, Merna; secretary, Dr. H. B. Landis, Broken Bow.

NEW MEXICO

Personal.—Dr. D. H. Galloway, Roswell, is reported to be seriously ill with pneumonia.——Dr. Frank de la Vergne, Albuquerque, has been appointed surgeon for a gold mining company at Gallop.——Dr. Francis T. B. Fest, East Las Vegas, has been made physician in charge of the United States Fruit Company's Hospital, Port Limon, Costa Rico.

Tuberculosis Within City Limits.—The Bernalillo County Medical Association at its last meeting adopted a resolution that the city council of Albuquerque was acting without clearly understanding conditions in prohibiting the erection of a sanatorium within a mile of the city limits, and that this action would be useless unless private rooming-houses were prohibited from receiving roomers suffering from tuberculosis.

NEW YORK

Pulmotors Given to Hospitals.—The Rochester Railway and Light Company has presented pulmotors to St. Mary's and the Rochester General hospitals, Rochester, and to St. Peter's and the Albany General hospitals, Albany.

Property for State Hospital Transferred.—About 130 acres of land in the town of Marcy have been transferred to the State of New York for $16,325. The property is to be used in connection with the new state hospital soon to be erected.

Clinical Meeting.—The first clinical meeting of the Tri-County Medical Clinic was held in Ellis and Mercy hospitals and the Children's Dispensary, Schenectady, March 6, when twenty-five operations were performed and many medical cases were presented, described and reviewed. The second clinic will be held in Troy in the fall.

Letchworth Needs New Buildings.—The annual report of the State Board of Charities has been transmitted to the legislature. It urges that an administration building be erected without delay and also an assembly hall and a service building for the Letchworth Colony. A number of smaller buildings are required, making the total appropriation $785,450.

The Accident Record.—The National Highways Protective Society has compiled figures giving the number of traffic accidents in the different cities of the state. For purposes of comparison the figures are reduced to a rate per 100,000 per annum and show for New York City 46, up-state 26, Buffalo 58, Syracuse 17, Rochester 66, Albany 36, Yonkers 85. These figures include accidents from all kinds of traffic. Of these automobiles furnish about 64 per cent. outside of New York City, street cars about 23 per cent. and wagons and miscellaneous the remainder. In New York City the proportion was about 50 per cent. for automobiles and 30 per cent. for street cars. The high rate for Yonkers is explained by its proximity to New York and because many highways out of New York pass through it, thus occasioning an automobile traffic greatly out of proportion to its population.

Hospital News.—Rev. Irwin Goddard has offered to contribute the $32,000 fund for St. Barnabas Hospital to Poughkeepsie for the building of a municipal hospital, provided $200,000 is raised in the city for that purpose.——Excavation for the buildings of the Winifred Masterson Burke Foundation Home for Convalescents, White Plains, has been begun. The total cost of the buildings will be about $1,000,000 and they are expected to be ready for occupancy about Jan. 1, 1915.——The new Saranac Lake General Hospital was formally opened March 11. The building is the gift of Miss Emily Dutton Proctor and her brother, Redfield Proctor, and is given in memory of Miss Jane Hopkins Fairchild and Dr. Norman McLeod Carter.——The new City Cancer Hospital, Buffalo, situated in the same block as the Buffalo General Hospital, will, it is expected, be completed in June.

Personal.—Dr. J. L. More, Pulaski, has been elected president and Dr. H. S. Albertson, Oswego, secretary-treasurer of the new Oswego County Tuberculosis Sanatorium, Orwell.——The residence of Dr. P. G. Borden, Chafee, was burned March 7 with a loss of $3,000.——Dr. R. A. Toms, Kenmore, who has been under treatment in New York City, has returned much improved.——Dr. Allan N. Moore, Lockport, fell on an icy step at his home, March 3, fracturing his right leg at the ankle.——Dr. Otto R. Eichel, superintendent of the J. N. Adam Memorial Hospital, Perrysburg, has resigned and has been succeeded by Dr. Clarence L. Hyde.——Dr. Charles J. Tucker, Rochester, while crossing the New York Central tracks recently, in his automobile, was struck by a freight train and painfully injured.——Dr. H. S. Liddle has been elected vice-president and Dr. George P. Harran, secretary-treasurer of the board of directors of Mercy Hospital, Schenectady.——Dr. Harold C. Goodwin has been continued as medical superintendent of the Albany Hospital.——Dr. Jacob Goldberg has been elected chairman of the board of medical examiners of Buffalo.

New York City

Fire in Physicians' Office Building.—A fire occurred on the morning of March 14 in the Sydenham Building which is devoted to offices for physicians. The sixth story of the building was gutted and the offices of Dr. Edmund Dill and Dr. Adolph Kaempfer were ruined.

Harvey Society Lectures.—The ninth lecture of the Harvey Society series, delivered March 22, at the New York Academy of Medicine was by Prof. Franz Knoop, University of Freiburg, Germany, on "Modern Problems of Nutrition." The tenth lecture will be delivered on March 29 by Prof. John Howland of Johns Hopkins University, on "The Scientific Basis for the Artificial Feeding of Infants."

Mary Putnam Jacobi Fellowship.—The Woman's Medical Association of New York offers this fellowship of $800 for post-graduate study. Applications for the year beginning Oct. 1, 1913, must be in the hands of the committee by April 1, and the award will be announced June 1, 1913. Further information may be obtained from Dr. Emily Lewi, 35 Mount Morris Park West, New York.

The Inwood Tuberculosis Hospital.—At a recent meeting of those interested in the Hospital and House of Rest for Consumptives, Inwood, Upper Manhattan, the reports of the officers showed a very gratifying year's work. The institution has at present sixty-five beds and will soon open ten additional beds for children. A woman's auxiliary has been formed to assist in the work of maintaining the institution.

Work of Hebrew Charities.—The United Hebrew Charities reports that during the past year it has aided 302 patients

suffering from tuberculosis, and has in many instances given assistance that involved the living conditions of the family, the amount thus expended being $41,470. This institution has been discouraging congestion of population on the East Side and for the past thirty years has been giving pensions to widowed mothers.

Growing Interest in the Crippled.—The Conference on Industrial Education for Children which was held in the Metroplitan Building on March 8 gave a special session to the consideration of the needs of crippled children. It was shown that primary teaching was the special need of the younger children, while there was a great field for industrial training among the older crippled children. The meeting created so much interest that a resolution was adopted making this section a permanent feature of the conference.

Clinical Lectures and Demonstrations.—The governors of the New York Skin and Cancer Hospital announce a course of clinical lectures and demonstrations in the outpatient hall of the hospital on Wednesday afternoons from April 2 to 27, inclusive, by Dr. L. Duncan Bulkley on "Surgical Diseases of the Skin," and on May 14 by Dr. Bainbridge on "Surgical Treatment of Malignant Diseases." Each lecture will be illustrated by cases, models, colored plates, photographs, etc. The lectures will be open to the medical profession on presentation of cards.

New York Wasteful of Human Life.—E. E. Rittenhouse, conservation commissioner of the Equitable Life Assurance Society, at a meeting of the finance forum of the West Side Y. M. C. A., recently arraigned the city authorities for their neglect to provide enough money for disease prevention and health education. He stated that 30,000 lives a year were sacrificed unnecessarily. He pointed out that there are insufficient hospital facilities and that those provided are not properly equipped as to the number of physicians and attendants; that there are too few milk inspectors; no proper facilities for checking the spread of tuberculosis, and that there is not even sufficient provision for the prevention of the spread of contagious diseases. The city fathers spend $26 per capita to run the city, but only 65 cents of that sum is expended for health.

Personal.—Dr. Frank Schneider, instructor in the department of biology and public health in the Massachusetts Institute of Technology and research associate in the Sanitary Research Laboratories, has become sanitarian of the department of surveys and exhibits of the Russell Sage Foundation. ——Dr. Robert Abrahams has been appointed manager of the Manhattan State Hospital.——A banquet was tendered Dr. William J. Robinson, editor of the *Critic and Guide*, March 7, at the Hotel St. Denis, at which Dr. Abraham Jacobi acted as toastmaster.——Dr. Alexis Carrel delivered an address before the Scientific Association of Johns Hopkins University, Baltimore, March 5.——Dr. Irwin E. Liss, an ambulance surgeon of the Lebanon Hospital, while endeavoring to protect a patient from injuries in an ambulance accident, sustained serious injuries and is in a critical condition.

Crocker Laboratory Assured.—The bequest of $1,566,635 to Columbia University for research work in cancer under the will of the donor, George Crocker, provided that the income from this fund was to be expended on research work alone and that no part of it was to be used for buildings. As a result the work has thus far been carried on in the laboratories of the College of Physicians and Surgeons. It is now announced that funds have been provided for the construction of a separate laboratory for cancer research work. The building will be erected on the property of the university known as East Field at Amsterdam Avenue and One Hundred and Sixteenth Street and will be 100 by 40 feet and three stories high. It is expected that the building will be ready for occupancy by the beginning of the summer. Dr. Francis Carter Wood was appointed director of the laboratory last summer.

The City's Spring Cleaning.—New York is in the throes of her first spring house cleaning. Commissioner Lederle had appointed Dr. M. B. McMillan, assistant sanitary superintendent, who formerly had charge of the sanitary campaign in Cuba, to take charge of the present task. Dr. McMillan says that the task of cleaning New York will be more difficult than that of cleaning Cuba because of the red tape by which everything is hedged about. The only way by which success can be attained, he states, is by the cooperation of the individual citizen. The city departments will each give active support to the work and many organizations have volunteered to lend their assistance, among them the Babies' Welfare Association, which includes a number of other organizations, the Tuberculosis Committee of the Charity Organization Society, the North Side Board of Trade, the Brooklyn Bureau of Charities and a number of lesser organizations. Dr. McMillan has asked the clergy of the city to devote a Sunday sermon to the movement.

NORTH CAROLINA

District Society Meetings.—Fourth Councilor District Medical Society at Rocky Mount: president, Dr. William H. Smith, Goldsboro; secretary-treasurer, Dr. M. M. Saliba, Wilson.——The annual meeting of the Seventh District Medical Society in Charlotte, March 11-12, was devoted entirely to clinical conferences.

Hospital Notes.—The legislature has granted a special charter for the Cone Memorial Hospital to be located in two divisions, one at Greensboro and the other at Blowing Rock. The institution possesses an endowment of $2,000,000.——Drs. Fred C. Hyatt, Charles E. Moore and Parran Jarboe announce the opening of the Greensboro Private Infirmary.

Personal.—Dr. Harry Q. Alexander, Matthews, has been appointed a member of the Constitutional Revision Committee of the State.——Drs. J. B. Golding, Greensboro, and William C. Horton, Raleigh, are reported seriously ill.——Dr. H. A. Royster, Raleigh, will deliver the address on surgery before the South Carolina State Medical Association at Rockhill, next month.

New State Appointees.—The following nominations were confirmed by the senate, just before adjournment: Drs. R. H. Lewis, Raleigh, and Edward J. Wood, Wilmington, members of the State Board of Health; Dr. Lewis B. McBrayer, Asheville, a member of the board of the State School for Feeble-Minded, Kingston; Dr. A. B. Croom, Jr., Maxton, member of the board of the State Hospital for the Insane, Raleigh; Drs. R. H. Lewis, Raleigh, and J. R. Gordon, Jamestown, members of the board of the State Sanitarium for Tuberculosis.

PENNSYLVANIA

Crawford County Publishes Bulletin.—The latest publication is the *Crawford County Medical Society Bulletin*, printed at Meadville.

Appeal of State Hospital.—The State Hospital, Fountain Springs, has made an appeal for an increased appropriation to make the needed improvements at the hospital. The chief requirements are a waiting-room, an increase in the size of the dispensaries, the establishment of a receiving ward and of an isolation ward for contagious diseases.

Personal.—Dr. James R. Montgomery, Bloomsburg, was operated on for the removal of gall-stones in the Bloomsburg Hospital on February 22, and is making a satisfactory recovery.——Dr. Thomas J. Goodfellow, Warren, for four years a member of the staff of the State Hospital for the Insane, North Warren, has resigned and will practice in New York City.——Dr. C. E. Rutter, Northumberland, was operated on for appendicitis at the Medico-Chirurgical Hospital, Philadelphia, March 4, and is reported to be doing well.

Philadelphia

Hospitals to Reduce Nurses' Hours.—Steps are being taken in Philadelphia hospitals to reduce the hours of the nurses to conform to the bill before the legislature, calling for an eight-hour day.

Medicine in Siam.—On March 21, the first of the lectures of the Philadelphia College of Pharmacy was held, when Dr. Charles S. Braddock, formerly chief medical inspector to the Royal Siamese government, spoke on "Pharmacy and Medicine in Siam."

Alumni Clinics at Jefferson Hospital.—The staff of Jefferson Hospital arranged for two days of special clinics and demonstrations March 21-22, to be attended by alumni and their medical friends. Seven clinics were given on the first day and six on the second.

Jefferson Buys Sanatorium.—On March 11, the Board of Trustees of the Jefferson Medical College decided to purchase the property at Fifth and Pine streets owned by Henry Phipps and adapt it to the needs of a new Jefferson Institute for the treatment of diseases of the chest. This institution will be operated as one of the departments of Jefferson Hospital and will provide for the care of fifty-two bed patients, the greater portion being devoted to the care of advanced cases of tuberculosis. Large dispensary facilities will be available for the advice and treatment of all walking cases. Cases of pul-

monary tuberculosis will be excluded from Jefferson Hospital. The management will be placed directly in charge of the medical department of the college with Dr. Thomas McCrae as medical director. The new department will greatly increase the dispensary service of the hospital, which totaled for the year ending May 31, 1911, 123,925 dispensary visits, an average of 340 walking patients treated a day, which does not include nearly 10,000 accident cases treated during the year.

TEXAS

Red Cross Classes Formed.—Two volunteer classes for Red Cross nursing and first-aid treatment have been organized among the women of El Paso. Dr. Alice P. Merchant has been elected president of the classes.

Pace Memorial to be Established.—Dr. John O. McReynolds has announced that plans will be undertaken immediately toward the establishment of the Pace Memorial Clinical Laboratory for Sick Children, Dallas, in memory of the late Dr. Jesse M. Pace, for many years a member of the faculty of the medical department.

Personal.—Fire in Grapeland damaged the office of Dr. P. H. Stafford to the extent of $1,000.——Dr. J. D. Magee, Abilene, who has been seriously ill, is reported to be out of danger.——Dr. H. C. Brownlee has resigned from the staff of the Austin State Hospital to accept the field directorship of the State Hookworm Commission, succeeding Dr. C. M. Hoch, resigned, to enter private practice at La Grange.

Commends Alsberg and American Medical Association.—Grayson County Medical Society at its meeting, March 4, adopted resolutions endorsing the course of Dr. Carl Alsberg in the enforcement of the Food and Drugs Act, promising its cooperation and support especially in the suppression of patent and proprietary frauds, commending THE JOURNAL of the American Medical Association for its fight against fraud, and calling on the medical profession throughout the country to join in this great fight for reform.

Medical Examiners Named.—The governor has nominated the following members of the State Board of Medical Examiners: Drs. W. B. Collins, Lovelady; W. L. Crosthwaite, Waco; George L. Baber, Winnsboro; J. H. Evans, Palestine, and E. B. Osborn, Cleburne; homeopathic representatives—Drs. T. J. Crowe, Dallas, and Dr. H. C. Morrow, Austin; eclectic representatives—Drs. M. E. Daniel, Honey Grove, and George W. Johnson, San Antonio; osteopathic representatives—J. F. Bailey, McLennan County, and Paul M. Beck, Bexar County.

State Association Meeting.—Elaborate arrangements are being made for the annual meeting of the State Medical Association of Texas at San Antonio, May 6-8. On the evening before the meeting, public health services are to be held in all the churches in San Antonio. On Tuesday night the memorial meeting will be held and on the following afternoon, the visiting ladies will be taken for an automobile ride about the city. On Wednesday evening a ball will be held, and for the delegates who do not dance, a dinner will be given at the Travis Club.

GENERAL

Bequests and Donations.—The following bequests and donations have been announced recently:

German Hospital and St. Catherine's Hospital, Brooklyn, each $5,000, in the will of Louis Bossert, Brooklyn.

Tuberculosis Prevention for Children, Farmingdale, N. J., $10,000, from an anonymous benefactor.

Maine State Sanatorium, Hebron, $75,000, to be known as the Levi M. Stewart fund, the interest to be used for the benefit of the institution, by the will of Levi M. Stewart.

Methodist Episcopal Hospital, Philadelphia, $5,000, for a free bed, to be known as the George W. Young bed, by Mrs. E. McCauley Bryn Mawr (Pa.) Hospital, $50,000 for the establishment of a free bed in the children's ward in memory of her brother and $5,000 for a free bed in memory of her parents, by the will of Miss Kate Clevenger, Lower Merion.

Charity, Lakeside, St. John's and St. Alexis hospitals, Cleveland, $35,000, the first installment by the will of Calvary Morris.

Sanatorium for Hebrew Children, Rockaway Park, N. Y., $20,000, by the will of Caroline Neustadter.

German Charity Ball, New York City, $10,000, distributed among nine institutions.

Report of Board of Health of Hawaii.—The report of the president of the Board of Health of the territory of Hawaii for the year ending June 30, 1912, is a book of over two hundred pages, and contains much interesting information concerning the health and sanitary condition of the islands. The work of the health department involves practically the same problems as those found in other tropical or semitropical countries, the mosquito problem as relating to yellow fever being one of the prominent ones. During the year covered by the report, however, yellow fever was not present to any great extent. Leprosy is perhaps the greatest problem peculiar to the islands, the total number under care in the different institutions being 686. There were 64 deaths from leprosy during the year. During the year there were small epidemics of plague, scarlet fever and diphtheria. Pneumonia caused 342 deaths and tuberculosis 363. Under the territorial laws tuberculosis is well reported, and except in the instance of cases under care of private physicians, complete records of cases of tuberculosis are kept, so that any case may be followed from the time it is first reported to its outcome. Six cases of plague occurred in the island of Hawaii. A systematic rat campaign is being conducted, and many thousands of rats were examined for plague during the year. On the basis of a population of about 200,000 the death-rate was 16 per thousand, as compared with 17 the previous year. About two hundred deaths were due to accident, violence and suicide; deducting these, the death-rate would compare favorably with any of the states or municipalities in this country. The report shows that well-directed efforts are being made to improve housing conditions in the cities and on the plantations, and to improve the methods of preparing and handling food-supplies. As elsewhere the health department is handicapped by insufficient financial support. Much work in this line is being done by the proprietors of plantations, and donations of money and materials are made to the health department by private persons and corporations. The report is illustrated by numerous pictures of conditions on the islands, and much statistical information is contained in the large number of tables included in the pamphlet.

FOREIGN

Other Deaths Abroad.—Sir Thomas Frederick Chavasse, Kt., J.P., M.D., Edinburgh, 1876; F.R.C.S. England and Edinburgh; eminent as a surgeon; consulting surgeon to the Birmingham General Hospital and a member of its staff for thirty-one years; died suddenly from pulmonary embolism at his home in Birmingham, February 17, aged 58.——Alfred Baynard Duffin, M.D., Edinburgh, 1858; emeritus professor of medicine in Kings College Medical School, London, and consulting physician to Kings College Hospital; died at his home in Wallington, Surrey, England, February 10, aged 79.——Ernest Maynard Paine, B.A., M.B., Ch.M., Sidney, Australia; a missionary of the New South Wales Church Missionary Association in old Cairo, Egypt; died February 12, in Cairo, from cerebrospinal meningitis.——Surgeon-General George Bidie, C.I.E., Indian Medical Service, retired; M.D. Aberdeen and L.R.C.S. Edinburgh, 1853; for thirty years a member of the Indian Medical Service, retiring in 1890; honorary surgeon to Queen Victoria, King Edward VII. and King George V.; who served with the Hyderabad contingent during the Indian mutiny; died at Bridge of Allan, Scotland, February 19, aged 81.——Prof. A. Podvyssotzky, director of the institute for experimental medicine at St. Petersburg.——F. Fede, professor of children's diseases at the University of Naples, and one of the leading pediatrists of Europe, died February 11, aged 81. He had long been a member of parliament and his voice was often raised on behalf of the necessity for a chair of pediatrics at every medical school and the necessity for a thorough examination in this branch for a medical degree. This is said to have been his "delenda Carthago" whenever he had occasion to speak on the floor. The contributions to pediatrics from him and his pupils are numerous and important.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, March 8, 1913.

A Surgical Innovation

The multiplicity of medical schools in London, each complete in itself with its own staff and its own students, has always been one of the difficulties for any one wishing to pursue medical studies here. There are a dozen medical schools attached to one of the great hospitals and leading an existence so isolated from all the others that they might as well be hundreds of miles apart. No system of intercommunication of any kind has existed among them. At last the idea occurred to some prominent surgeons that the loss from practically never seeing the work of the colleagues in other hospitals might be remedied. It seemed to them somewhat invidious to go unasked into each others' theaters. A movement was therefore set on foot to approach a prominent member of the surgical staff of each of the hospitals in London with a medical school attached, who in turn should consult his colleagues with view to some arrangement to advance the study

of the practice of surgery. The suggestion was received with favor, a committee was formed, and it was decided that each hospital should once in the year issue invitations to all the members of the surgical staffs of the London medical schools. This is to be done by the hospitals in the order of seniority. Bartholomew's, being the oldest, took the lead. Four surgeons operated at 2 p. m. and the remainder of the surgical staff at 2:45. The visitors, who consisted entirely of surgeons from the other hospitals, occupied the floors of the theaters. Though only thirty surgeons attended out of a possible eighty, the function was a most successful one, and great interest was shown in the operative procedures and in the theater and nursing arrangements.

The Working of the Insurance Act

The harassing and unnecessary clerical work thrown on physicians by the insurance act has been referred to in previous letters to THE JOURNAL. The not inconsiderable amount of labor in signing the medical tickets is now practically over. It is unfortunate that the act came into force at the time of the year when practitioners are busiest. In spite of this and the fact that a number of insured persons call on physicians out of curiosity, however, the Medical Committee for London is able to state that the average number of patients seen by doctors on the panels in some of the most densely populated areas is only about 2 per cent. of those on their lists. The large proportion is seen at the offices and comparatively few in the patients' homes. The burdensome clerical work is being replaced by a system which it is said will give less trouble than the bookkeeping of private practice. A pharmacopeia is also being prepared.

New Roentgenotherapeutic Department at the Cancer Hospital

At the annual general meeting of the governors of the Cancer Hospital the Medical Committee reported that 535 operations were performed during the year, the mortality being 4.48 per cent. The new roentgenotherapeutic department had enormously increased the usefulness of the hospital, and the enhanced facilities for the diagnosis and treatment of the disease afforded by the modern apparatus and appliances has resulted in greatly increasing the number of patients relieved or cured. Dr. Knox, the director, reported that he was working out a complete system of Roentgen-ray dosage with the assistance of Dr. Salmond, and he hoped in the near future to elaborate a technic which should materially assist in the relief of patients suffering from cancer. The changes which had occurred in the blood of patients undergoing treatment were also being investigated with the object of obtaining, if possible, some data on which statistics could be based as to why some cases responded to the treatment and others did not. An appeal was made for the sum of £5,000 for the purpose of starting a much-needed cancer library.

Lowest Death-Rate on Record; Great Fall in Infant Mortality

Statistics of births and deaths for the last quarter of 1912 have just been issued by the registrar-general, and show that the records have again been equaled or beaten. Deaths registered in England and Wales numbered 124,861, an annual rate of 13.6 per thousand persons living. This is 1.5 per thousand below the mean rate in the ten preceding fourth quarters, and is equal to the rate recorded in the corresponding period of 1911, which was the lowest death-rate recorded in any quarter since the establishment of civil registration. Of the deaths, 20,884 were of infants under 1 year of age. This was equal to 98 per thousand, or 33 per thousand below the average in the ten preceding fourth quarters.

The rate is the lowest recorded in any corresponding quarter since 1870, the first year in which records of this kind were kept, the next lowest having been 113 per thousand in the fourth quarter of 1911. A total of 212,856 births were registered, equal to a rate of 23.1 annually per thousand of the population. This was 2.4 per thousand below the mean rate in the ten preceding fourth quarters, but 0.1 per thousand above the rate in the corresponding period of 1911, which was the lowest birth-rate recorded in any fourth quarter. The natural increase in the population during the year was 385,818, as against the quinquennial average of 395,462.

The Street Perils of London: Want of Ambulance Provision

The alarming increase of accidents in London since the development of motor traffic has been referred to in previous letters to THE JOURNAL. The returns of the board of trade for 1911, which have just been published, show that the number of accidents is greater than ever. They amounted to 20,589, of which 435 were fatal.

This alarming increase is attributed to increasing congestion of traffic and to the indiscriminate mingling of vehicles proceeding at various speeds. The motor omnibus appears to be responsible for more deaths than the street-car. Not long ago a motor bus knocked down and killed a policeman who was regulating the traffic. In spite of the increased number of accidents there is still no proper and efficient ambulance service outside the city, where there is a motor service. In other parts of London the only service consists of stretchers on wheels, which are under the management of the police.

The Workmen's Compensation Act

As shown in previous letters, the workmen's compensation act is constantly giving rise to fresh legal problems. In the following case a point occurred which has never been raised before: A workman sustained an accident causing partial incapacity, and his employers were paying him his full wages for light work, without any agreement being recorded or any award being made, when heart disease supervened, rendering him unfit for any kind of work. The heart disease was not in any way due to the accident. The employers then desired to discontinue the arrangement.

In proceedings taken at this point a judge made an award refusing to order the continuance of any compensation on the ground that the man's incapacity was due to the heart disease, which would have rendered him unable to work in any case if there had been no accident. The case was then carried to the court of appeal, which reversed the decision of the lower court and held that a workman in such circumstances was entitled to compensation until it was proved that he had completely recovered from the effects of the accident. A supervening infirmity, which might be heart disease or paralysis, or which might be mere failure of powers through old age, did not affect this. The case was accordingly remitted to the lower court to fix the rate of compensation.

Polluted Oysters and Typhoid

Owing to the occurrence of typhoid fever in a man who had been in the habit of eating oysters, an investigation was undertaken by the London health department. The oysters were relaid Portuguese taken from a laying in the Medway, and were found to be contaminated with sewage. Their further sale has been prohibited. Dr. Collingridge, health officer of London, says that the only way to prevent the danger of typhoid fever from recurring is to empower local authorities to close all contaminated beds, pits and layings within their jurisdiction until they are free from pollution, subject to the control of the local government board.

The Tropical Diseases Exhibition at Ghent

The British government has made arrangements for taking part in the tropical diseases exhibition to be held at Ghent this year. The London School of Tropical Medicine, the Liverpool School of Tropical Medicine, the Cairo and Khartum schools, the navy and the army will be represented. Each of these organizations has been given certain diseases to illustrate in a popular manner, so that people may realize what is being done to make the tropics habitable to mankind. The cases will contain specimens of the insect pests which are the cause of the spread of disease in the tropics, with examples of the culture of bacteria taken from their blood, and numerous microscopic and photographic views of the development of the different stages. In all, thirteen diseases will be illustrated. The London School of Tropical Medicine will make a complete display of the work in progress in connection with cholera, beriberi and elephantiasis, including any fresh information available consequent on the outbreak of cholera among the Balkan troops. The Liverpool school will set out the work that is being carried on against yellow fever and sleeping sickness, diseases in which the school has specialized for a long time. The admiralty will exhibit what has been done by the fleet surgeons in the matter of undulant fever, more commonly known as Malta fever, and due to the goats of the island. The war office will take up that scourge of all armies, typhoid fever, and will depict the results of the study in the prevention and cure of the disease. Plague comes under the direction of the India office, and Dr. Andrew Balfour of the Egyptian service will make a special exhibit dealing with leprosy and other Eastern diseases. Most, if not all, of the exhibits will make an important feature of the part played by flies, mosquitoes, fleas and rats in the distribution of disease.

Part of the display is intended to inform the public how best to guard against these insect pests. Mosquito-proof houses, mosquito-proof clothing, and even mosquito-proof books are to be on view. A rat-proof house will be included in the departmental exhibits. There will be several examples of foods which have been deprived of their nutritive qualities, such as polished rice, which causes beriberi. The Liverpool school, which deals with this subject, will exhibit tinned foods from which the nutritive properties have been withdrawn in the process of preserving.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Feb. 28, 1913.

Treatment of Amebic Abscess of the Liver by Emetin

Subcutaneous injections of soluble salts of emetin have recently been proposed by Rogers as a method of treatment in amebic dysentery and in abscess of the liver of the same origin (THE JOURNAL, July 20, 1912, p. 226, and Sept. 21, 1912, p. 971). At the meeting of the Académie de médecine, February 25, Dr. Chauffard, professor of clinical medicine at the Faculté de médecine de Paris, reported a case of amebic abscess of the liver opening into the bronchial tubes which was quickly healed by emetin hydrochlorid. When the treatment was begun the fistula had persisted for five months and the amount of reddish pus raised each day was from 200 to 250 c.c.; an ulceration existed in the rectum; the temperature varied between 35 and 38 C. (95 and 100.4 F.); the general health was poor, and the roentgenographic examination showed an opacity extending from the base of the right lung and blending with the shadow of the liver. From December 21 to 25 six injections of emetin hydrochlorid, each 0.04 gm., were given and were supported perfectly, with hardly any pain and without producing any nodules of local induration. The expectoration was reduced on the second day from 200 c.c. to 150 c.c., on the third to 60 and on the fourth to 45; on the fifth day sputum was raised only three times and after that not at all. At the same time the temperature dropped permanently to normal. The leukocyte count fell from 49,000 to 19,800 and the polynuclears from 77 to 63. The rectal ulcerations healed and the base of the right lung became clear. The patient has recovered completely since and has increased in weight 6 kg. (13 pounds).

Statistics of Physicians, Pharmacists, Midwives and Dentists

The following are the official statistics for the year 1911:

Physicians	20,809
Pharmacists	11,589
Midwives	13,966
Dentists	2,848

Chair of Hygiene and Clinical Medicine for Diseases of Early Childhood

A chair for the theoretical and practical teaching of this subject, which has not heretofore been on the program of the Faculté de médecine de Paris, has been established at the suggestion of the dean, Professor Landouzy.

Increased Cost of a Medical Degree

The Conseil supérieur de l'instruction publique has voted to raise the cost of obtaining a diploma as doctor of medicine. Since 1893 the cost has been 1,395 francs ($275), but will now be 1,640 francs ($325). The increase of 245 francs ($50) has been made necessary by additions to the course together with the increased number of examinations required. Of the new total, the universities will receive 950 francs ($190) and the treasury 690 francs ($135).

Reform in Examinations

The Commission supérieur de l'enseignement médical, at its recent session, made a new rule. At the suggestion of Professor Teissier of Lyons, approved by Professor Debove and Dr. Lucas-Championnière, the examining boards hereafter will have one member chosen by the Académie de médecine. It is hoped in this way to combat the tendency toward favoritism which has often shown itself at examinations.

It is of interest to note that in the preliminary discussion the commission found itself divided into two factions. One faction emphasized the desirability in the preliminary training of teachers of extended theoretical knowledge. This was the view of Dr. Weiss, professor at the Faculté de médecine de Paris, and Dr. Lucas-Championnière. The other faction, among whom was Dr. Widal, believed that practical training and individual research should take precedence.

The Paul Segond Foundation

A number of friends, colleagues and pupils of the late Paul Segond have planned a memorial fund in honor of the memory of this eminent surgeon. The income will be used to help interns approved by the council of the Faculté de médecine de Paris to pursue research work and to prepare for their examinations.

A Priest-Healer in Court

The court at Pennes has fined Abbé Chaupitre 1,000 francs ($200) and awarded damages against him in favor of the Syndicat des médecins d'Ille-de-Vilaine and the Syndicat des pharmaciens of the same department, of 3,000 francs ($600) each. This is the third time that the abbé, who is known throughout the region as the priest-healer, has been in the police court. His defense was that he practiced homeopathy, and that as this system is not recognized by law, he was not amenable to the law. The court did not fall in with this view.

Personal

The Académie de médecine has elected Alexis Carrel of New York and Arnozan of Bordeaux national correspondents.

Following the death of V. Podvyssotzky, director of the Institut de médecine expérimentelle at St. Petersburg, this post was offered to Metchnikoff, assistant director of the Institut Pasteur de Paris. Metchnikoff declined, giving as one reason the fact that in Russia he would not have at his command so important a bacteriologic laboratory as the one at the Institut Pasteur.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Feb. 28, 1913.

Personal

Professor Lubarsch of Düsseldorf has succeeded the deceased Professor Heller as director of the institute of pathology at Kiel.

Professor Jores of Cologne has been appointed director of the institute of pathology at Marburg.

Professor Henkel of Königsberg has been appointed director of the institute of pathology at Breslau, as successor to Professor Ponfick.

Professor Hoffman of Prague has been appointed in place of Prof. L. Hermann as director of the institute of physiology at Königsberg.

February 21, the widow of Rudolph Virchow died at the age of almost 81. She was a sister of the Berlin gynecologist Mayer. Until her death she enjoyed a rare activity of mind, of which I received several proofs during the last year through letters from her. Although, in accordance with her modesty of character, she never courted publicity, she was a splendid companion to the gifted investigator. His high regard and respect for her will be seen on reading the "Letters of Rudolph Virchow to his Parents," which were published several years ago.

Friedmann's Tuberculosis Remedy

I notice that the puffs for the Friedmann remedy in the American newspapers continue without restraint. It seems as if there must be some organized agency working systematically for this propaganda.

Bavarian Research on Effects of Athletics

The Bavarian department of education has approved the addition of an experimental laboratory for the Royal National Institute for Gymnastic Exercises at Munich, for the investigation and measurements of the effects of individual gymnastic exercises, plays and sports. The medical work in connection with this laboratory will be carried on under the direction of Dr. Hans von Baeyer, privat-docent for surgery at the University of Munich. The influence of physical exercise on the human organism, on the breathing, heart-action, etc., is to be determined on scientific principles and with the help of physiologic methods, so as to discover their temporary and permanent beneficial and harmful effects. Further, those pursuing the present two-year course for the training of physical directors will be instructed in making such measurements on the pupils, so that in cooperation with the future school-physicians satisfactory material for a more thorough scientific foundation for athletics in general may be available.

Admission of Foreigners to the Prussian Universities

The minister of education recently stated to a committee of the Prussian parliament that foreigners have always enjoyed an extensive right of hospitality in the German universities,

which fact is also of value to Germany, as in this way advantageous connections between foreign countries and Germany are cultivated. Of course, the foreigners must appreciate the hospitality and should not interfere with the studies of the native students. In order to limit the number of foreign students, the minister has doubled the admission fees of foreigners to the institutes; further, the same preliminary requirements will be exacted, as far as possible, as from the native students, and Russian students, in particular, must be graduates of Russian gymnasiums. The foreigners are crowding the universities at Königsberg, Breslau, Berlin and Halle especially. The strike of the students at Halle was caused by tactless administration of a ministerial decree; the minister has now remedied the cause, and hereafter admission to the clinics will be conditioned on the preliminary education. Further measures for the limitation of the number of foreign students were considered. It was recommended in this committee to admit only a certain percentage of foreigners, as for instance in Munich, where only three out of a hundred are admitted.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, March 2, 1913.

Death of Professor Frank

Vienna lost recently one of its most prominent surgeons, Prof. Rudolph Frank, who died from the consequences of a septic angina (tonsillitis). The deceased professor, who was only 50 years old, had been one of the favorite pupils of the late Albert, famous for his keen observation and diagnostic acumen. Frank was chiefly a surgeon who regarded the human body as an artistic structure, and he was very fertile in designing clever plastic operations. He was also an expert abdominal surgeon, and his many pupils were well trained, especially in the two lines of surgery mentioned above. The kind-hearted professor will be sorely missed by his large clientele.

Austrian Sanitary Preparations in the Event of War

The experience gained in the recent Balkan War has shown that none of the belligerents was really prepared, from the sanitary point of view, for the tasks imposed by the exigencies of war. The various European branches of the Red Cross had to give assistance extensively; otherwise the wounded men would have simply perished from sheer want of medical aid. The knowledge thus gained on the battle-field was embodied in a series of lectures and discussions before the Vienna Gesellschaft der Aerzte. One of the most interesting of these was delivered by Professor Hochenegg, the director of the state surgical clinic at Vienna. He reviewed the whole military and sanitary problem which Austria would have to face in case of a war—a probability by no means unlikely just now. Three points are important: the medical assistance, the system of nursing and the materials used for sanitary purposes.

MEDICAL ASSISTANCE

Exact calculations seem to show that a minimum of about 100,000 wounded soldiers would have to be cared for at one time in case of war, which our country may be obliged to wage in the near future. Of these, 80,000 would be the lot of Austria, 40,000 of Hungary. The Austrian Red Cross will accommodate 10,000 men in its hospitals. The rest of the 50,000 would have to be made fit for transport in the field hospitals and then be sent to the rear into surgical wards. For this purpose 250 wards, each containing 200 beds, would be required (twenty beds in one room). Each ward would require the services of one head surgeon and two surgical assistants. In this respect Austria would have to depend quite on herself, as no help from the outside would be forthcoming. In distributing the reserve physicians among the regiments little attention is at present paid to their surgical abilities.

THE SYSTEM OF NURSING

We have too few nurses fit and trained for service in war. We are not well equipped in this. For 50,000 wounded, a minimum of two thoroughly competent nurses per ward is indispensable, making 500 head nurses. The second class of nurses is derived from those who are trained to assist in the hospitals; these need not be completely trained for independent surgical nursing. Of these, three nurses per room with twenty beds would probably be sufficient, making a total of 7,500. We do not possess so many "sisters," and therefore would have to rely on volunteer nurses. Since a large number of such nurses would also be required for the convalescent houses, the contagious hospitals, and for substitution in the civil hospitals, from which the regular nurses would be called to serve in the war, at least 25,000 female nurses would be necessary.

MATERIALS FOR SANITARY PURPOSES

An interesting study deals with the enormous amount of dressings, etc., required in case of war. No less than 10,500,000 meters (12,000,000 yards) of cotton dressings and roll bandages would be needed for 50,000 wounded, as such bandages and dressings would have to be constantly renewed. At times we have already had difficulty in buying such material in the open market because enormous quantities have been sent to the Balkan battle-fields, and the factories could not produce enough to meet all the demands. Therefore in time of peace the supply depots must be well stocked with this kind of material.

OTHER CONSIDERATIONS

An important point for medical preparation deals with the care of war-epidemics. Professor Kraus has recently organized a method for this purpose in Bulgaria, and the work begun by him there will be continued here. Easily transportable laboratories have been established, and a staff of nurses is being formed.

It is important to develop the Austrian Red Cross, for in this country it has only 60,000 members, against 600,000 in Germany and over 2,000,000 in Japan. In the discussion, Professor Clairmont declared that private nursing in the Balkans has simply been a farce, and Professor Fränkel also declared that the present method is absolutely inadequate. He said that if women want the rights of men they must also submit to the duties of men; and since men are enlisted in the army of fighters women ought to be recruited for the army of nurses. Interesting data were given by Head-Staff-Surgeon Steiner. He said that the military authorities were prepared to deal with more than double the number of beds mentioned by Professor Hochenegg. The problem of replenishing the materials used for dressings is solved by the letting of large contracts. The sanitary service is also guaranteed. Only the nursing is not yet quite up to date as regards numbers. It may be added that as regards india-rubber material, which deteriorates by keeping and non-usage, only a small stock is kept because in case of need it can be had at once from the factories under contract to furnish it. A final plan for the regulation of the burning problem of nursing is just now being worked out, and will be brought to the public notice within a short time.

Jubilee of Professor Chiari

Otto Chiari, the well-known rhinolaryngologist, celebrated his sixtieth birthday a short time ago, when the esteem and love of his pupils and friends were impressively shown. Apart from more personal honors, like banquets and congratulations, a *Festschrift* was published in honor of the scientific achievements of the professor. Numerous Anglo-American surgeons are just now staying at the Chiari Clinic, and they too took the opportunity of paying their respects to the senior of this branch of medicine in Austria.

Statistical Data for 1912

An interesting report dealing with vital statistics of Vienna for 1912 was recently prepared and read by Dr. Böhm, the head physician of the Vienna Board of Health. Chief attention is centered around the figures dealing with the mortality of the city. In 1912 Vienna not only reached but even surpassed all other European capitals in the low rate of mortality. It stood as low as 14.6 per thousand inhabitants; even the healthiest English and German cities show no lower figures. Altogether 32,131 persons died in Vienna last year against 33,684 in the previous year (14.6, representing 15.68 per thousand). Ten years ago the figure was 17.89 per thousand. The drop in mortality means a saving of over 30,000 lives within the last decade. The real significance of this welcome fact is not apparent until the deaths are grouped according to the age incidence. Here it becomes manifest that the drop in the number of deaths is due chiefly to improved hygienic conditions and the increased expectancy of life of infants. While ten years ago nearly 9,000 infants and 7,200 persons over 60 years of age died, last year a complete reversal of these figures took place: only 6,000 infants died in 1912 and nearly 10,000 persons over 60 years old; among the latter were 1,434 octogenarians, against 1,180 in 1903. Consequently a decided change of morbidity also was found. All diseases peculiar to infancy and childhood have diminished in frequency and fatal-

ity, while such diseases as may be called exhaustion diseases, or those caused by the wear and tear of life, are on the ascending line. For instance, diseases of the respiratory organs were reported as fatal in 4,174 instances against 5,290 in 1903 (tuberculosis excluded; this has gone down from 7,748 to 6,298 in spite of increase of population). The alimentary canal claimed 2,911 victims against 3,865, while the circulatory system was fatally diseased in 4,835 cases (in 1903 3,302 cases), and malignant growths claimed 2,753 (2,137) persons. The preventable, accidental diseases had become less frequent; arteriosclerosis, cancer, myocarditis more frequent, and more of old age appeared in the death-roll. The consideration of these figures leads to the conclusion that while the duration of life is much prolonged in Vienna now, a distinct drop in the number of births is not less conspicuous (Vienna Letter, THE JOURNAL, Jan. 25, 1913, page 300). In Vienna alone, only 40,503 living children were born in 1912, while ten years ago the figure was 45,930, and twenty years ago 50,327, when the population was 500,000 less. The lessened fertility is a general fact in all European countries except three or four, and cannot altogether be accounted for by economic reasons. It has already become a problem of the utmost importance in England, France and Germany, and appears here too. Therefore strenuous efforts are being made to lessen at least infant mortality, and all the measures adopted for this purpose by the various societies for the care of infants, by the hygienic societies, the school boards and the like, aim at the same goal. The fact remains that in Vienna alone the birth of infants has been 100,000 less within the last twenty years than one would have been justified in expecting.

Miscellany

Small-Pox

For small-pox as a community disease there are two methods of treatment—vaccination and hospitalization.

For fires as a community ailment there are two methods of treatment—fire-proof construction and fire engines.

To prevent small-pox, most states use both methods. Minnesota and a few neighboring states say, If everybody is vaccinated there will be no small-pox. It is unjust to make the vaccinated pay for expensive small-pox hospitals. The quickest way to get everybody vaccinated is to make it impossible for the unvaccinated to impose on the vaccinated.

"We will not support small-pox hospitals." A thoroughly logical position—one that will be tenable when knowledge is better diffused and human judgment is better. But as yet we have not reached the stage where all men are judgmatical enough to make it fit. The peculiarly minded minority so tyrannize the majority that few health officers deem the Minnesota policy best.

No one has yet proposed to do away with fire engines and thus force everybody to fire-proof construction.

Compulsory vaccination laws have been enforced in every European country for about a quarter of a century. With them this question has not been open for debate for about a generation, except in England. In Cuba, Porto Rico, Panama and the Philippines it is also demonstrated, proved, accepted and no longer discussed. When, however, it is proposed to do as much for the children of Louisville as we have done for the Filipino, there rises up a small but noisy group, shrewd enough to cry out in the name of liberty. License would be a better term, but it is not catchy, and Bellamy has termed this a phrase-catching age.

In this group there are no men who have had any practical experience in controlling small-pox. That all of those, whether engineers, nurses, or doctors of the different schools, who have been charged with the responsibility of handling small-pox are firm believers in the efficacy of vaccination is a source of great concern to the antivaccinationists, and, in consequence, they seek to borrow some names to conjure with. Their prize package is Sir Alfred Wallace.

Now, what are the facts about Sir Alfred that would lead any one to think his judgment on this point can be safely followed? He was born in 1823. In 1858 he dreamed out the theory of natural selection almost simultaneously with Darwin. As soon as he got over the chills he went to England, got into close touch with Darwin, and, for fifteen years, fought the battle of Darwinism.

In the middle seventies he renounced religion and in 1881 became a spiritualist and aligned himself against the material and in favor of spirit direction soon thereafter. In 1885 he wrote "Forty-Five Years of Registration Statistics," in which he sought to prove that the statistics showed that small-pox was not on the decrease from 1840 to 1885.

He never had any experience with small-pox or vaccination, disease prevention, hygiene or sanitation, and therefore the conclusions of this old man, honored though he justly was, represent nothing except the conclusions of an anti-materialist drawn from the somewhat imperfect statistics of a period when vaccination was quite imperfect. It would take more than Wallace to convince the man of the street that there is as much harm from small-pox as there used to be.—Dr. W. A. Evans, in the Chicago *Tribune*.

Intelligence and Wealth.—The village of Greenwich, Conn., boasts fifty-seven millionaires. These millionaires have children and wives. The estates they own are valued at around $10,000 per acre. It is perhaps the highest-priced suburban property in the world. Greenwich has also mosquitoes, and a special brand—anopheles. In consequence, last year this village had 900 cases of malaria. Some of these probably meant neurasthenia or other ills for the rest of their victims' lives. There is no finer foundation for chronic invalidism. In this epidemic, for such it was, were included the children and the wives of the rich. Malaria is not, like tuberculosis and many other maladies, a luxury of the poor. Nor is it a filth disease. It has one, and only one, cause: the anopheles mosquito. This discovery is now twelve or fifteen years old. No educated physician in the world any longer questions it. Panama is the everlasting monument to this discovery. But for this discovery we should have failed in building the canal, as the French failed, and for the same reason: anopheles. With all this in mind (the regular health officer having done nothing), one or two intelligent physicians of Greenwich asked the town committee for an extermination fund—$5,400. The committee refused. Then the fifty-seven millionaires were appealed to and they royally subscribed $280.—*Collier's Weekly*.

By-Effects of Neosalvarsan.—A. Bayet of Brussels says that the necessity for retracting early statements follows premature publications as the shadow follows the solid body. But he yields to the request of the *Presse médicale belge* (1912, lxiv 755), and reviews his experience with neosalvarsan. He has found that the immediate disturbances following injection of neosalvarsan are less than with salvarsan, but the phenomena later show that there is little if any difference in the actual toxic action of the two drugs. Even in his brief experience (April to September) he has had two severe cases showing this toxic action. One was in a man of 24 with syphilis of three months' standing; 0.07 gm. of neosalvarsan was injected and eleven days later 0.08 gm. Immediately fever and a scarlatinal eruption developed and he vomited for two days, but there was no headache. The fourth day these symptoms had subsided but both legs and the bladder then became totally paralyzed, with other signs of profound injury of the nerve centers in the lumbar region, but nothing to indicate meningitis or polyneuritis, syphilitic paraplegia or a nerve relapse. The Wassermann test was negative. In the second case bilateral neuritis of the nerves of the forearm with atrophy of one interosseus muscle followed five injections in two weeks, amounting to a total of 2.5 gm. of neosalvarsan.

Another Father Damien.—The English King has done a good deed. He has made Dr. George Turner a knight. Who is Sir George Turner? Few, in America at least, except medical specialists know him, but those specialists know him as one of the greatest authorities on the subject of leprosy. When he was practicing as a physician and medical officer in South Africa, the leper hospital at Pretoria made a great appeal to him; such a great appeal, indeed, that he gave up all his spare

time to work among the lepers. He would go to their hospital morning and night, and devoted all of his Saturdays and Sundays to them. For years he labored among them without pay of any sort, investigating the nature of the terrible disease, and doing all he could to ease the lot of the sufferers. On reaching the age limit Dr. Turner retired from his official duties and went to England to pursue further his studies into the source of leprosy. After several years of work the disease attacked him. But he still labored on in his investigations, though life now meant ever-increasing pain, disfigurement, and consequent seclusion. He has now, it is reported, lost his left arm. The story goes that he was recently asked to dinner by some admirer, to whom he replied: "I should be glad to go, but I am a leper, you know." It is a pleasure to learn that Dr. Turner's name was included on the King's own initiative.—*Outlook.*

One Danger From Incompetent Practitioners.—Our community was shocked in the extreme when a young man of our town (Sunbury) shot the chief of police, who never regained consciousness and died about twelve hours afterward. A stray shot also injured the young man's father but not seriously. The history of the case shows that the mental condition of the young man had been below par for more than three years and that he became serious about one year ago, when under the care of two local physicians. They made a diagnosis of dementia praecox, which was sustained by Dr. Mills of Philadelphia, and Dr. Meredith of Danville. Not improving at home, he was placed under treatment as a private patient at Danville for some time, after which his father (not by the advice of his physicians) brought him home. He was then placed under the care of an osteopath from Harrisburg. The father was assured that he could expect great improvement by this treatment and was beguiled into believing that his son was decidedly better. Ten days before the homicide the boy refused to take his treatment and could not be induced by appeal or reason to continue the treatments. The father then determined to compel him to take the treatment and then take him to a sanitarium for further treatment. The father asked the chief of police to assist him in taking the young man to Harrisburg and then to the sanatorium. It seems the young man anticipated this move for he had procured a revolver and the moment his father and the chief of police entered his room he began the deadly shooting. Reflecting on this case and two other cases in the experience of the editor, we wondered if it would not be wise to have the law prohibit the removal of a patient suffering from so grave a disease as dementia praecox even if he were a private patient. Is an osteopath competent to diagnose so grave a malady, and is it not nearly so great a crime to hold out false hopes of recovery against the judgment of superior physicians, as the homicide itself? Is not this a strong plea that osteopaths should be trained in diagnosis and prognosis as well as the regulars?—Northumberland County (Pa.) *Medical Society Notes.*

Marriages

FREDERICK GEORGE HUBBARD, M.D., to Miss Olga L. Johnson, both of Cayuga, N. Dak., at St. Paul, Minn., March 7.

HARRY F. HOFFMANN, M.D., Rittersville, Pa., to Miss Ruth Virginia Peabody of Westerly, R. I., March 4.

VERNON C. MORTON, M.D., Rantoul, Ill., to Mrs. Ella Oakman of Peoria, Ill., in Chicago, March 5.

HARRIS A. BOLTON, M.D., Warm Springs, Mont., to Miss Maud Smith of Racine, Wis., March 8.

ALVA CURTIS FOSTER, M.D., to Mrs. M. E. Phillis, both of Decatur, Ill., March 1.

BENJAMIN H. MATTHEWS, M.D., to Miss Anna Lyman, both of Denver, recently.

LOUIS DANIEL SMITH, M.D., to Miss Rose Robbins, both of Chicago, March 9.

ELIAS BRUCE MOSS, M.D., to Miss Ethel Marie Davis, both of Chicago, March 1.

Deaths

Roland Gideon Curtin, M.D. a prominent practitioner of Philadelphia; died at his home, March 14, aged 73. Dr. Curtin was a native of Bellefonte, Pa.; was naval store keeper at the Philadelphia Navy Yard during the Civil War and was graduated from the University of Pennsylvania, Philadelphia, in 1866. He was a member of the American Medical Association; a member and president in 1892 of the American Climatological Association; president of the Philadelphia Medical Club in 1905; of the Philadelphia County Medical Society in 1904 and of the American Society of Tropical Medicine in 1905. He was assistant physician to the Philadelphia Lying-In Charity Hospital for eleven years; chief of staff of the medical dispensary of the University Hospital for ten years; physician to the throat and chest department of the Howard Hospital for six years; once president of the medical board of the Philadelphia Hospital; visiting physician to the University and Presbyterian hospitals; and consulting physician to the Rush Hospital for Consumptives, Jewish, Frederick Douglass and St. Timothy hospitals.

In 1868 he served as surgeon to the United States Geological Survey; he was lecturer on physical diagnosis in his alma mater from 1875 to 1895 and contributed more than one hundred articles to the medical literature. During the centennial at Philadelphia he was assistant medical director; in 1871 he was given the degree of Ph.D. by the University of Pennsylvania and in 1883 the degree of A.M. by Lafayette College.

James Livingston Thompson, M.D. Rush Medical College, 1860; emeritus professor of ophthalmology in the Indiana University School of Medicine, Indianapolis; a member of the American Medical Association; assistant surgeon and surgeon of Volunteers and finally medical director for the western district of Kentucky during the Civil War; an ophthalmologist well known throughout the Middle West; died at his home in Indianapolis, March 5, from pneumonia, aged 80.

Frederick Charles Johnson, M.D. University of Pennsylvania, Philadelphia, 1883; president of the Wilkes-Barre *Record* Company; formerly a member of the American Medical Association, the Pennsylvania State Board of Charities and a member of the Medical Society of the State of Pennsylvania; a historiographer of more than local prominence; died at his summer home near Dallas, Pa., March 5, aged 54.

Patrick Frederick Gildea, M.D. College of Physicians and Surgeons, New York City, 1889; of Colorado Springs, Colo.; a member of the American Medical Association, American Association for the Study and Prevention of Tuberculosis and American Laryngological, Rhinological and Otological Society; died in Coronado, Cal., March 6, from heart disease, aged 47.

Michael Henry Foy, M.D. New York University, New York City, 1898; a member of the surgical staff of St. Joseph's Hospital, Yonkers, N. Y.; examining physician for the New York Central and the Yonkers Railway Company; died in St. Joseph's Hospital, March 5, from septicemia, three days after an operation for appendicitis, aged 39.

Scott Culbertson, M.D. University of Louisville, Ky., 1876; Bellevue Hospital Medical College, 1879; a member of the Indiana State Medical Association; a specialist on diseases of the eye, ear, nose and throat of Vevay, Ind.; auditor of Switzerland County from 1909 to 1913; died at his home in Vevay, February 13, aged 60.

Robert Shuter Macrum, M.D. University of Pennsylvania, Philadelphia, 1897; a member of the American Medical Association; president of the Board of Health of Sewickley, Pa., and the head of the electro-therapeutic department of the Sewickley Valley Hospital; died at his home, March 4, aged 44.

James Barclay, M.D. McGill University, Montreal, 1897; of Montreal; demonstrator of obstetrics in his alma mater; later a surgeon on the Elder-Dempster Steamship Line; medical inspector for the United States Immigration Bureau in Montreal; died in Cowansville, P. Q., February 24, aged 38.

Thomas Moody, M.D. Tulane University, New Orleans, 1880; one of the oldest practitioners of Paris, Tex.; for forty-five years a practitioner of Lemar County and for several years county physician; a Confederate Veteran; died at his home in Paris, Tex., March 3, from senile debility, aged 80.

James Daniel Cox, M.D. College of Physicians and Surgeons, Baltimore, Md., 1892; a member of the Medical Society of the State of Pennsylvania; vice-president of the First National Bank of New Salem and for thirteen years a school director; died at his home in New Salem, March 9, aged 51.

John W. McDonald, M.D. University of Edinburgh, Scotland, 1871; L.R.C.S., Edinburgh, 1896; a member of the American Medical Association; at one time secretary of the Hennepin County Medical Society; professor emeritus of surgery in Hamline University; died at his home, in Minneapolis, March 4, from heart disease, aged 68.

Louis E. Norris, M.D. Berkshire Medical College, Pittsfield, Mass., 1861; assistant surgeon of the Seventeenth Maine Infantry and Second Maine Cavalry throughout the Civil War; for half a century a practitioner of Hampden Highlands, Me.; died in the Paine Hospital, Bangor, Me., March 2, from pneumonia, aged 76.

Alexander Taylor Bell, M.D. College of Physicians and Surgeons, New York City, 1858; a surgeon in the Confederate service during the Civil War, serving with Stuart's Horse Artillery; died at the Maryland Line Confederate Soldiers' Home, Pikesville, February 24, aged 77.

Roger Burns Gladden, M.D. University of Arkansas, Little Rock, 1888; of Purdy, Mo.; formerly a member of the Missouri State Medical Association and a representative in the state legislature from Barry County; died in State Hospital No. 3, Nevada, March 5, aged 59.

Walter Kendall Jewett, M.D. Harvard Medical School, 1895; librarian of the University of Nebraska, Lincoln; for several years a practitioner of Fitchburg, Mass.; died in St. Elizabeth's Hospital, Lincoln, March 3, four weeks after an operation for appendicitis, aged 42.

James N. Powell, M.D. University of Louisville, Ky., 1852; for more than forty years a practitioner of Henderson County, Ky.; one of the founders, and for many years a member of the Corydon School Board; died at his home in Corydon, March 8, from senile debility, aged 74.

Rush H. Dew (license, West Virginia, years of practice, 1881); a member of the Harrison County Medical Society; for nearly fifty years a practitioner and for thirty-three years a resident of Salem; died, February 21, from carcinoma of the throat, involving the larynx.

James F. Robertson, M.D. Detroit (Mich.) Medical College, 1877; a member of the Kansas Medical Society; mayor of Caldwell, Kan., for one term; died at his home, March 5, as the result of injuries received in an automobile accident three months before, aged 57.

John Davies Trezise, M.D. Long Island College Hospital, Brooklyn, 1901; a member of the Medical Society of the State of New York; for many years connected with the health department of Brooklyn; died at his home, March 4, from pneumonia, aged 50.

James Edwin Clemens, M.D. University of Louisville, Ky., 1881; surgeon for the Texas and Pacific Railroad at Marshall, Tex., from 1884 to 1886; for several years a practitioner of Washington, D. C.; died at his home in New Orleans, February 27, from uremia.

Ephraim Winnie, M.D. University of Michigan, Ann Arbor, 1857; a member of the Medical Society of the State of New York; for fifty-five years a practitioner of Steuben County; died at the home of his daughter in Hornell, February 19, aged 77.

James M. Amis, M.D. Kansas Medical College, Topeka, 1898; of Topeka; formerly assistant coroner of Shawnee County; died in the Cottage Hospital, Galesburg, Ill., March 3, from disease of the kidneys and heart, aged 40.

Arthur G. Six, M.D. Starling Medical College, Columbus, O., 1897; died at his office in Lawrence, Mich., March 11, from the effects of gunshot wounds, believed to have been self-inflicted with suicidal intent while despondent.

James Marshall Kent, M.D. Lincoln (Neb.) Medical College, 1906; Nebraska College of Medicine, Lincoln, 1907; formerly of Kenesaw, Neb.; died at his home in Encampment, Wyo., February 28, from uremia, aged 30.

Merritt Allen Long, M.D. Tufts College Medical School, Boston, 1905; of Lowell, Mass.; a member of the Massachusetts Medical Society; died in the Lowell General Hospital, March 4, from pneumonia, aged 37.

Peter Borland, M.D. Cooper Medical College, San Francisco, 1897; of Tomales, Cal.; a surgeon on the Panama Line of the Pacific Mail Steamship Company; died in Acapulco, Mex., January 5, from pneumonia.

Charles Francis Storrs, M.D. University of Vermont, Burlington, 1853; the oldest practitioner of DuPage, County, Ill.; died at his home in Warrenville, from carcinoma of the prostate, March 3, aged 80.

Herbert L. Townsend, M.D. University of Vermont, Burlington, 1881; a member of the Vermont State Medical Society; died at his home in Bridport, February 27, from anemia, aged 52.

David N. Finley, M.D. Hahnemann Medical College, Chicago, 1895; a member of the staff of Agatha Hospital, Clinton, Ia.; died at his home in that city, March 6, from senile debility, aged 82.

Peter Breadalbane Stewart, M.D. University of Vermont, Burlington, 1898; formerly of Iron River, Wis.; died at his home in Chetek, Wis., March 3, from heart disease, aged 46.

Samuel S. H. Washington, M.D. Howard University, Washington, D. C.; a colored practitioner of Alabama since 1887; died at his home in Montgomery, February 24, aged 54.

Albert Job Evans, M.D. Hahnemann Medical College, Philadelphia, 1871; formerly of Lockport and Fredonia, N. Y.; died at his home in Pasadena, Cal., February 26, aged 67.

Price W. Atkins, M.D. College of Physicians and Surgeons, Baltimore, Md., 1878; a member of the Medical Society of Virginia; died at his home in Marion, March 2, aged 57.

Eben Riley Rice, M.D. Miami Medical College, Cincinnati, 1876; of Monticello, Ky.; died March 1, from cerebral hemorrhage, while making a professional call, aged 77.

Daniel I. McMillan, M.D. Northwestern University Medical School, Chicago, 1869; died at his home in Sunbeam, Ill., February 25, from cerebral hemorrhage, aged 75.

Stephen Howard, M.D. University of Pennsylvania, Philadelphia, 1866; of Bottineau, N. Dak.; died in a hospital in Brandon, Man., March 1, from heart disease, aged 70.

Warren Franklin Roberts, M.D. Hahnemann Medical College, Chicago, 1884; of Marshall, Mich.; died suddenly in that place, March 3, from heart disease, aged 51.

Ephraim Welty (license, years of practice, Iowa, 1886); for nearly fifty years a practitioner of Norwalk; died at his home in that place, February 1, aged 72.

Robert D. Darnell, M.D. American Medical College, Eclectic, St. Louis, 1882; a pioneer practitioner of Kalama, Wash.; died at his home, February 18, aged 57.

Owen F. Hildebrandt, M.D. Medical College of Ohio, Cincinnati, 1902; formerly of Cincinnati; died at his home in Owensville, O., March 5, aged 37.

Alfred Henry Savard, M.D. Laval University, Montreal, 1881; died at his home in Northampton, Mass., February 12, from peritonitis, aged 50.

Royal Gray Hamilton, M.D. Rush Medical College, Chicago, 1876; died at his home in Ocheyedan, Ia., January 14, from senile debility, aged 84.

Edgar J. Washington, M.D. Marion-Sims College of Medicine, St. Louis, 1896; died at the home of his father in St. Louis, February 25, aged 36.

Robert J. May, M.D. Detroit (Mich.) College of Medicine, 1892; died at his home in Matamora, Mich., March 2, from pneumonia, aged 42.

James H. Millikin, M.D. University of Nashville, Tenn., 1869; died at his home in Franklin, Ky., March 1, from senile debility, aged 82.

George W. Evans, M.D. Jefferson Medical College, 1865; of Richmond, Ky.; died suddenly, February 27, from heart disease, aged 70.

Hamilton Graham, M.D. Hahnemann Medical College, Philadelphia, 1892; died at his home in Kennett Square, Pa., February 22.

A. J. Scofield, M.D. Ensworth Medical College, St. Joseph, Mo., 1893; died at his home in Quenemo, Kan., February 10, aged 60.

Hiram D. Brown, M.D. Berkshire Medical College, Pittsfield, Mass., 1854; died at his home in Potsdam, N. Y., February 18, aged 77.

Walter Hardy Ramsey, M.D. Memphis (Tenn.) Medical College, 1873; died at his home in Memphis, February 22, aged 69.

Alexander McKelvey, M.D. Trinity Medical College, Toronto, Ont., 1878; died at his home in Brussels, Ont., Dec. 29, 1912.

George C. Way, M.D. Jefferson Medical College, 1875; died at his home in Altoona, Pa., about February 26, aged 65.

C. E. Smith, M.D. Memphis Hospital Medical College, 1901; of Baxterville, Miss.; died at his home, February 22.

James A. Smith, M.D. Rush Medical College, 1872; died at his home in Norway, Ia., March 1.

The Propaganda for Reform

FLOURS AND FOODS FOR DIABETICS

Dangerous Products Sold Under Misleading Claims

We have at different times called attention to the misconceptions which exist in the minds not only of the public but also, unfortunately, of many physicians regarding so-called gluten flours and diabetic foods. The most dangerous error is the assumption that gluten flours are practically free from starch. Curiously enough—and yet not so curiously, if one remembers the evil forces that have attempted to cripple the pure food law—this danger has increased rather than decreased since the advent of the federal Food and Drugs Act.

"Gluten Flour: Guaranteed to Conform to the Government Standard" sounds well, but means little. It means little because the government standard makes no requirements regarding the starch-content, which is the item of importance from the point of view of the diabetic, but merely prescribes that it shall contain at least 35 per cent. protein. Nor is this all. Under the ruling that has been in force for some time in the department—a ruling, by the way, that was promulgated by Solicitor McCabe and "Me-Too" Dunlap and strongly opposed by Dr. Wiley—a flour containing 17.5 per cent. protein may be legally labeled "Gluten Flour ½ Standard." The absurdity of this is apparent when it is realized that, under it, ordinary flour (which contains about 10 or 11 per cent. protein) might legally be labeled "Gluten Flour ⅕ Standard." Dr. Wiley fought against this idiotic and dangerous ruling but was voted down by those who, during their administration, showed such solicitude for the food sophisticators.

Gluten flours are as a rule prescribed only for diabetics to whom the starch-content is of the utmost importance. A physician tells his patient to use a gluten flour not because that product is rich in protein but because it is (supposedly) poor in carbohydrates. The great majority of so-called gluten flours and gluten foods sold in this country contain dangerously high percentages of carbohydrates, and the manufacturers do their best to keep both physician and patient in ignorance of this fact. In the case of gluten flours of legal standard, the protein-content is emphasized and made the main selling point. The subject of starch-content is studiously avoided, and it becomes necessary to write letters to the manufacturers specifically asking for the carbohydrate-content of their products, which may then be grudgingly—and not always truthfully—given.

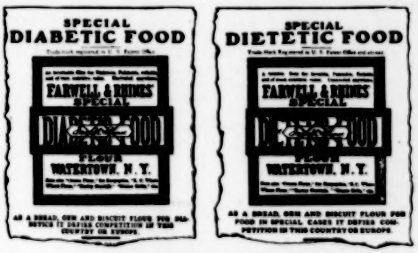
For the purpose of determining the status of some of the most widely advertised flours and foods for diabetics, a Chicago physician wrote to the manufacturers of these preparations asking for their advertising matter and specifically requesting that he be told the carbohydrate-content of the different products. The result of the investigation follows. It must be remembered that in every instance, unless otherwise stated, the figures are the manufacturers' own. It will be seen that, even accepting the exploiters' own statements regarding the starch-content, the preparations are as a class viciously dangerous as foods for diabetics.

BRUSSON GLUTEN BREAD

This product is put out by Brusson Jeune, Villemur, France, and it is handled in this country by Gustav Muller & Co., New York. So far as we can learn the advertising matter sent out by this concern gives the purchaser no information regarding the starch-content of Brusson Gluten Bread. As in the case of most products for diabetics dangerously high in starch, an attempt is made to give the impression that starches are not so deadly for diabetics as physicians believe. This attitude on the part of the company will not be wondered at when it is known that according to its own admission—made when asked point blank—Brusson Gluten Bread contains 49.77 per cent. of starch! Within the last few months, the American agent for Brusson Jeune has been sending out, with other advertising matter, a testimonial letter by Willard H. Morse, M.D., Hartford, Conn. If anything further were needed to condemn these products a testimonial in their favor from Willard H. Morse supplies that need. As most of our readers know, Morse makes a practice of supplying testimonials and fake analytical reports on various medical and medicinal frauds. He has endorsed such humbugs as the Ideal Sight Restorer, Towns' Epilepsy Cure, the Oxydonor, Duffy's Malt Whisky, L. Q. Lloyd's consumption cure, E. J. Woods' cure for drunkenness, Oleozone consumption Cure, Manola, Daniel's Passiflora Incarnata and numerous others.

FARWELL & RHINES' GLUTEN FLOUR

Farwell & Rhines' methods have been the subject of criticism in THE JOURNAL before. Their product is dangerously high in carbohydrates (46.05 per cent.), and the methods of advertising are particularly vicious. In their circulars and other advertising matter they refer to the protein-content of their product but avoid giving any information regarding the amount of starch. If, however, a physician will write asking for an analysis of the Farwell & Rhines' Gluten Flour, they send a small sticker on which the analysis is printed. If the company's pronouncement that this is "a flour for diabetics" means that it is a safe flour for diabetics, the statement is not only false but also dangerous. Time was, and not so long ago, when Farwell & Rhines advertised their "Special Diabetic Food," which they said was "an invaluable flour for diabetics." As the standards of commercial honesty rose, the company was apparently forced to change the name of this preparation, and it became "Special Dietetic Food." A comparison of the older


SPECIAL
DIABETIC FOOD
FARWELL & RHINES
SPECIAL
FLOUR
WATERTOWN, N. Y.
AS A BREAD, GEM AND BISCUIT FLOUR THIS PRODUCT IS UNEQUALLED IN THE COUNTRY OR EUROPE
SPECIAL
DIETETIC FOOD
FARWELL & RHINES
SPECIAL
FLOUR
WATERTOWN, N. Y.
AS A BREAD, GEM AND BISCUIT FLOUR THIS FOOD IN SPECIAL CASES IT DEFIES COMPETITION IN THIS COUNTRY OR EUROPE

BEFORE AND AFTER
THE PASSAGE OF THE FOOD AND DRUGS ACT

Fig. 1.—Farwell & Rhines' "Special Diabetic Food" contains a dangerously high percentage of carbohydrates. When the Food and Drugs Act went into effect, it would have been difficult to sell this stuff under its old name and escape prosecution. The problem then became: How can we fool the people and at the same time obey the letter of the law? The answer appears in the photographic reproduction of the labels given above. On the left is the old label; on the right, the new one. The "Diabetic" food became a "Dietetic" food; the "flour for diabetics" became a "flour for food in special cases."

label with the newer shows how it is possible to violate the spirit of a law while grudgingly conforming to its letter.

HEINTZ FOOD COMPANY

This concern, located in Chicago, manufactures a product which used to be called "Heintz Diabetic Biscuits," but which is now sometimes called the "Heintz Gluten Biscuits," and again "Heintz Glutin Biscuits." To call them diabetic biscuits was such an evident fraud that it became necessary to change the name. It seems to be difficult at present to get the Heintz Food Co. to say just how much carbohydrates their gluten biscuits contain. Two years ago they stated glibly in answer to an inquiry: "There is less than 5 per cent. of carbohydrates in the diabetic biscuit." This was a falsehood. When written to within the past few weeks, the company stated regarding its gluten or "glutin" (*sic* diabetic) biscuit that it "contains a small percentage of carbohydrates." They said further:

> "We use for its manufacture a gluten flour which contains about 10 per cent. of starch; this we dilute with a certain percentage of bran, which has been deprived of its starch."

The reader is led to infer, of course, from this statement that Heintz Gluten (or "glutin") Biscuits contain only about 10 per cent. of carbohydrate. This we doubted, and we doubted

because we knew that two years ago when they claimed that their "Diabetic Biscuit" contained less than 5 per cent. of carbohydrates, it actually contained about 50 per cent. Their later product, therefore, was submitted to the chemical laboratory of the American Medical Association for the determination of the carbohydrate content. The Association's chemists reported that instead of finding "about 10 per cent. of starch" they actually found 51.64 per cent. of carbohydrates.[1]

JIREH DIABETIC FOOD CO.

Recently[2] we had something to say regarding this concern and its so-called diabetic products. The selling point of the Jireh concern is not that their foods are starchless—a claim they could hardly make and "get away with"—but that the starch has been "changed" or, as they have put it more recently, "treated." The claim that the starch had been "changed" was fraudulent, and the later modification—that it has been "treated"—should not be taken seriously. Like the razors in the story, the Jireh Diabetic foods and flour are "made to sell." Two years ago the manufacturers admitted

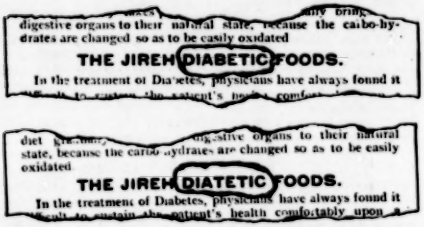

digestive organs to their natural state, because the carbo-hydrates are changed so as to be easily oxidated
THE JIREH DIABETIC FOODS.
In the treatment of Diabetes, physicians have always found it
diet
digestive organs to their natural state, because the carbohydrates are changed so as to be easily oxidated
THE JIREH DIATETIC FOODS.
In the treatment of Diabetes, physicians have always found it

Fig. 2.—The "Jireh Diabetic Foods" are no more suited for diabetics than is ordinary bread. Hence, under the Food and Drugs Act, to label such products "diabetic foods" would constitute misbranding. The Jireh concern evades the law by changing one letter, the "b" in diabetic to "t," and the coined and meaningless word "diatetic" is the result. It is the letter of the law that kills. Here are photographic reproductions of portions of pamphlets sent out before and after the Food and Drugs Act went into effect.

Fig. 3.—The Jireh concern for years claimed that their diabetic foods were "starch-changed"; they were not. To-day they are labeled "starch-treated." Whether this statement is any nearer the truth than the old one is immaterial to the diabetic, for the Jireh products are utterly unsuited for the diabetic's dietary. Here are their trade-marks before and after the enactment of the Food and Drugs Act. The lines drawn around, and the "fists" pointing to, the words "changed" and "treated," have been added by us before reproducing the trade-marks.

that the Jireh Flour contained 73.02 per cent. carbohydrates—practically the same amount found in ordinary flour. The more recent circulars do not give the carbohydrate percentage, but contain what purport to be the results of analyses to determine the *starch* percentage—the amount of dextrin, sugar, etc., is not mentioned. According to this later list, Jireh Flour contains 58.59 per cent. of starch which, even admitting it to be no understatement of the facts, is sufficient to condemn the product. The "Jireh Diabetic Biscuit" contains over 60 per cent. (64.52) of carbohydrates and, evidently to escape prosecution, the firm has changed the name of this product to "Jireh Diatetic Biscuit." This seems to be the keynote of the Jireh concern in its attempt to "get around" the federal Food and Drugs Act. Of course, there is no such word as "diatetic," but it is sufficiently like the word "diabetic" to mislead the average person. Apparently it is the intention of the Jireh Diabetic Food Company to invade the medical journal advertising field. This, at least, is what one would infer from the appearance in the *Southern Practitioner*—a sheet that offers an advertising haven for many of the widely advertised therapeutic frauds on the market—of what purports to be an original article by one Dr. George Morse Norton. The "article" is entitled "The Value of Starch-Treated Foods in the Dieto-Therapy of Diabetes Mellitus." It is typical of a class of articles, fortunately seldom seen to-day in the pages of decent medical journals, but once a common method of advertising proprietary preparations. It has the outward semblance of a scientific article and discusses the history, definition, pathology, etiology, etc., of the disease—all of the matter, apparently, having been obtained from ordinary text-books. The joker appears when the reader reaches the part of the article devoted to the "treatment"; this section is practically nothing but a rehash of the Jireh Diabetic Food Company's advertising matter.

BOND GLUTEN DIABETIC FLOUR

The Bond Gluten Diabetic Flour is put on the market by the Mayflower Mills, Fort Wayne, Ind. Very little advertising matter is sent out by the concern and apparently no information regarding the carbohydrate-content of the product is given unless specially requested. To a letter written two years ago asking for the carbohydrate-content of Bond's Gluten Diabetic Flour, the firm replied that it contained 40 per cent. gluten and that they had another flour "that carries 80 per cent. of gluten." The company then added, somewhat ingenuously:

"We do not know what percentage of starch either of these flours would contain, but you can readily see that they are genuine flour and of the very highest quality."

Written to more recently on the same subject, the Mayflower Mills replied:

"The last analysis of our Bond's Gluten Diabetic Flour showed carbohydrates 50 per cent. and the gluten per cent. [*sic*] three times the amount found in the best wheat flours."

Needless to say, Bond's Gluten Diabetic Flour is a dangerous product for diabetics and should be declared misbranded under the Food and Drugs Act.

P.-L. GLUTEN FLOUR

P.-L. Gluten Flour is made by the Pieser-Livingston Co., Chicago. This company in its advertising circulars and letterheads publishes an analysis of its flour, giving the percentage of moisture, nitrogen and gluten but making no mention of the amount of carbohydrates. When asked for the starch-content of their flour, they send a typewritten letter in which it is admitted that the product contains over 50 (51.28) per cent. of carbohydrates. The Pieser-Livingston Company publishes what purport to be testimonials from Chicago and other physicians. These testimonials, if genuine, are not such as to inspire confidence in the medical profession. For instance one Chicago physician writes that he has compared the analysis of the P.-L. Gluten Flour with the analyses of flours of other makes and

"I find your flour better in 'Proteids' and less sugar than other makes. Gladly recommend it to all physicians and those troubled with 'Diabetes' and stomach trouble."

Another Chicago physician also has made a comparison of analyses and he writes:

"I am led to believe that it contains more gluten and less sugar, or dextrose, than any other flour of its kind in the market. I would, therefore, recommend it to all physicians to be prescribed for patients suffering with diabetes."

1. Incidentally, the Heintz Food Company makes another product, Heintz Health Biscuits. These are claimed to be a "natural laxative" and are also said to be "non-medicated"; in fact, "there is not a bit of any kind of medicine in them." When examined in the Association's laboratory about two years ago, the drug phenolphthalein was found as an ingredient. The state chemists of North Dakota have examined them more recently and report finding the same drug.

2. Propaganda Department, THE JOURNAL, Dec. 14, 1912, p. 2174.

Still another testimonial from a well-known Chicago physician is "featured" a little more than some of the others. This runs, in part:

"I am using your gluten flour in cases of diabetes and that I find it useful where only a small amount of starch is to be incorporated in the diet."

Ordinary wheat flour contains about 73 per cent. of carbohydrates; P.-L. Gluten Flour contains, on the manufacturer's own statement, over 50 per cent. How it is possible to feed a patient with bread made from flour containing more than 50 per cent. of carbohydrates and at the same time give that patient "only a small amount of starch" is matter for speculation. The P.-L. Gluten Flour is no flour for a diabetic.

PURE GLUTEN FOOD COMPANY

This company markets various products under the name of "Hoyt's Gum Gluten." It advertises in medical journals more extensively, probably, than any other manufacturer of so-called diabetic foods. In its advertisements, appears this statement:

"In all cases where non-starch diet is indicated, prescribe only Gum Gluten Foods."

The viciousness and cruelty of this advice may be realized when it is learned that, even according to the manufacturers, the various Hoyt Gum Gluten products contain carbohydrates ranging from 40.63 per cent. up to 48.2 per cent. As in the case of most exploiters of products of this kind, the protein content of the different preparations is emphasized and enlarged on. For instance, can more grossly misleading claims be made than these that appear on the packages of the various Gum Gluten products:

"The extracted and concentrated strength of wheat."
"The rich albuminous muscle-building element which furnishes the body with what it needs without taxing it."
"The only true food for those having diabetes."
"The nitrogenous food of the twentieth century."
"Endorsed by the medical profession as a perfect food."

In view of these claims, the following testimonial, alleged to have been written by a Brooklyn doctor, is a gem:

"These preparations are all you claim for them."

WILSON BROTHERS' GLUTEN FLOUR 4/7 STANDARD

This is the flour that, above all others, makes the present ruling of the Department of Agriculture on what constitutes a "gluten flour," a joke and a disgrace. The stuff is said to contain 20 per cent. of protein. The government standard for gluten flour requires 35 per cent. So far as we are able to learn the amount of carbohydrates is not given in any of the advertising matter put out by Wilson Brothers. They do give, however, what purports to be an analysis by Gustave Mannel, an analytical chemist of Rochester, N. Y. Mr. Mannel certifies that he has analyzed a sample of Wilson Brothers' product and finds it "very rich in gluten." He then makes the following remarkable statement—remarkable, that is, in view of the admission that the firm itself makes when held down to it:

"A very small percentage of starch remains with the pure gluten, and this combination forms a special food of high merit where starch is not wanted. This flour contains more gluten and less starch than any flour I have ever analyzed."

Now Wilson Brothers will admit—if you insist—that their product contains 64.1 per cent. of carbohydrates. In view of this fact, Mr. Mannel's idea of percentages seems somewhat mixed. Few people would consider 64.10 (the amount of carbohydrate in the Wilson product) "a very small percentage" when compared with 74.0 (the percentage of carbohydrates in ordinary flour). As has already been said, Wilson Brothers' preparation contains 20 per cent. of gluten and 64.1 per cent. of carbohydrates, and yet Mr. Mannel says that it "contains more gluten and less starch" than any flour he has ever analyzed. Evidently his experience in analyzing gluten flours has not been an extensive one.

SUMMARY

So much, then, for some of the most widely advertised products for the use of diabetics. They are one and all advertised under claims that are either directly or inferentially false or misleading. They all contain percentages of carbohydrates that are dangerous in the extreme to real sufferers from diabetes. Their continued sale under present methods is a menace. Every product sold for the use of diabetics should be required by law to have plainly stated on the label the percentage of carbohydrates it contains. Every physician who is treating a diabetic should make it his business to find out the percentage of carbohydrates in any flour or food that he thinks of recommending to his patient. He is not justified in telling his patient offhand to give up the use of ordinary bread and flour and use a "gluten bread" or "gluten flour." For, as we have shown, a flour may be legally labeled gluten and still contain dangerously high percentages of carbohydrates, and it is the carbohydrates that are the essential elements so far as the diabetic is concerned.

DANGEROUS PRODUCTS SOLD TO DIABETICS

Manufacturer and Product	Carbohydrate Percentage
Brusson-Jeune Co., New York City.	
Brusson Gluten Bread	49.77
Fornell & Rhines, Rochester, N. Y.	
Gluten Flour	46.05
Heintz Food Co., Chicago.	
Gluten (Glutin) Biscuit	51.64
Jirch Diabetic Food Co., New York City.	
Jirch Diatetic Biscuit	64.52
Jirch Flour	58.59
Jirch Bread	39.12
Mayflower Mills, Fort Wayne, Ind.	
Bond Gluten Diabetic Flour	50
Pieser-Livingston Co., Chicago.	
Pieser-Livingston Gluten Flour	44.30
Pure Gluten Food Co., New York City.	
Hoyt's Gum Gluten Biscuit Crisps	43.85
Hoyt's Gum Gluten Breakfast Food	44.52
Hoyt's Gum Gluten Flour	47.40
Hoyt's Gum Gluten Granules	43.84
Hoyt's Gum Gluten Noodles	48.20
Hoyt's Gum Gluten Self-Raising Flour	40.63
Wilson Bros., Rochester, N. Y.	
Gluten Flour	64.10

THE EMETIC ACTION OF THE DIGITALIS BODIES

To the Editor:—In THE JOURNAL, Feb. 1, 1913, p. 371, was an editorial statement as follows:

"An important deduction from the work of Hatcher is that the mode of administration and the preparation have only a minor influence on the production of nausea by the digitalis bodies, and that this symptom indicates the beginning of toxic action and hence a point at which caution should be exercised. Instead of seeking for a form of the drug which will not produce nausea, or for a method of checking it, we should remove the cause by suspending the administration of the drug, or giving it in smaller doses."

Again, Feb. 15, 1913, p. 502, appeared the following by Eggleston and Hatcher:

"The appearance of nausea and vomiting following the use of any of the digitalis bodies by whatever channel administered must be looked on in ordinary cases as a sure sign of the toxic effect of the drug on the medulla, and one which calls for an intermission of administration, rather than for the use of such drugs as opium to control the symptoms, as recommended by Hochheim."

All the above statements, without enlargement, I fear might lead some of your readers to neglect digitalis in cases and at times when it is most urgently needed. In cases of cardiac decompensation with venous stagnation in the greater circulatory tree, the liver and entire gastro-intestinal tract are congested and swollen. From congestion of the intestines there

results in such cases a compensatory diarrhea, and from congestion of the stomach there likewise result nausea and vomiting.

Given a case with nausea and vomiting from congestion, digitalis is strongly indicated, and it does become necessary to employ measures which will make it possible for the needed medicine to be retained. The nausea and vomiting here are of peripheral origin. Assuming that we have a case of this sort to begin with and that the digitalis is administered even under the skin, into the muscles or into the vein, it requires considerable nicety of judgment to decide when the nausea and vomiting, if they continue, are caused by central overstimulation and when only by the still unreduced peripheral congestion. The rate of the pulse and the apex-beat are here the chief guides.

A still more difficult situation faces the clinician when he is treating a patient who presents various symptoms which indicate that digitalis is urgently required, but who does not have nausea and vomiting when the administration of the drug is begun. Then digitalis is administered, as too often happens, in hopelessly inadequate doses. This treatment may be continued for from twenty-four to thirty-six hours, and then nausea and vomiting appear. Does this indicate digitalis intoxication and that the drug must be stopped? Not at all. It means that the drug is being given in doses too small to have any bracing effect on the circulation and that the patient's condition is growing worse, so that the congestion of the stomach has increased and now nausea and vomiting of peripheral origin are manifesting themselves. In such cases, in spite of the vomiting, the drug, instead of being stopped, must be pushed, and in sufficient dosage; and when they are required, measures to aid in the retention of the drug must be employed. With such treatment the nausea and vomiting soon disappear and the general condition of the patient improves.

These are considerations of the utmost importance from the point of view of the patient and the clinician, and must be made clear. While I have no doubt that they are entirely clear in the mind of the writer of the editorial in question, and to the writers of the article of February 15, the statements quoted, as they appear in print, might possibly lead to a misunderstanding.

M. SCHULMAN, M.D., New York.

The title of the editorial and of the article referred to, "The Emetic Action of the Digitalis Bodies," indicates clearly that the vomiting discussed was that which results from the action of these preparations, and not vomiting due to other causes entirely and wholly independent of digitalis administration, such as those cited by our correspondent. It is evident from a consideration of the passage quoted from the articles of Drs. Eggleston and Hatcher, taken in connection with the context, as it should be, that the authors have reference to the nausea and vomiting due to the action of the digitalis bodies. Elsewhere (p. 501) the same article says:

"A solid or semisolid fat such as that in digitalis or strophanthus is a very indigestible substance, and it is quite conceivable that the psychic effects of the disagreeable odor of the oil of digitalis might result in nausea in the case of a patient having an extremely irritable stomach; but it is not within the province of the present paper to deal with the psychic effects of odors."

It is clear that this disclaimer of possible adventitious vomiting due to other causes sufficiently relieves the authors of responsibility in those cases in which nausea and vomiting are incidental to the disease and apart from the effects of digitalis. We are glad, however, that Dr. Schulman has called attention to the necessity of carefully distinguishing between the nausea arising from the toxic action of the remedy administered and the nausea which may be due to other conditions. In the first the remedy should, of course, be discontinued; in the second it may be the very agent that will successfully combat this symptom when it arises from extraneous causes.

Correspondence

Bread From Bolted Flour and From Entire Wheat Flour

To the Editor:—I have admired very much the high stand which THE JOURNAL has taken relative to pure foods and pure drugs, and its high standard in everything relating to the medical profession. I am writing now to call your attention to the injury which has been done through a recent editorial (Jan. 4, 1913, p. 50) relating to the use of bolted wheat flour for food purposes and giving quasi-approval of it as an article of food. This has been seized on by the flour-millers in the Middle West and they are making use of it to their business advantage. I will admit that if one has the opportunity of reading your editorial all through, the last part rather annuls the first part and leaves the question "astride the fence." I have been trying through writings and lecturing and such influence as I have been able to exert, to establish a public sentiment in favor of whole wheat flour and unpolished rice.

You will admit that the whole trend of recent investigation has resulted in unquestioned demonstration that in the denaturing of flour and in modern methods of manufacture and in polished rice, elements necessary to health, strength, endurance and resistance to disease are removed.

The influence of THE JOURNAL is so vast that it can, if it will take up the matter, exert a most healthful influence on the whole community by giving publicity to actual facts relative to this important question. You are undoubtedly familiar with the fact that animals die in the course of thirty or forty days if fed on polished rice or demineralized wheat, while if fed on whole wheat flour or unpolished rice they thrive and reproduce their kind.

What you say relative to the digestibility of starch is unquestionably true; but you leave out the large question of the value of food salts normally found in cereals. Protein and starch, as you well know, and not "all in all" in the food-supply of the animal body, for those alone without the mineral ingredients which go for life, health, strength, longevity and resistance to disease would give human life a very short shrift. It is my earnest desire that in some future article or editorial you give a just and fair exposition of the significance of the mineral ingredients of food to the human family.

HORACE PACKARD, M.D., Boston.

COMMENT.—The editorial on bread (Jan. 4, 1913, p. 50), presents certain facts, old and new, on the subject under discussion. It is not a propaganda for any kind of bread nor does it aim to establish a sentiment for a special type of food. The differences between various kinds of flour are indicated, correctly we believe; the changes which methods of production and agriculture have brought about are touched on; the relative importance assigned to various constituents of the grain and the possible significance of accessory factors are specifically emphasized (see next to last paragraph). The crux of the discussion will be found in the last paragraph. Let us consider our correspondent's comments.

If the facts reported in our editorial are correct we cannot object to the fact that manufacturers make use of them to their business advantage. Certainly we are quite as willing that the public at large, the manufacturer, or the purveyor should profit by the contributions which appear in our columns, as that our columns should be of assistance to the man of medicine. The truths of science are not the exclusive property of any select group of individuals; all that we can ask is that the contributions be accepted and promulgated in a spirit of honesty—that the truth be not distorted.

We must expect that every well-intentioned reader will at least read the editorials all through and gather their contentions before deploring omissions which have not been made.

No one who has followed our editorial columns closely can have failed to find repeated detailed reference to the features mentioned by our correspondent in connection with the milling of flour and the polishing of rice. The presumable danger of polished rice and demineralized wheat apply to exclusive feed-

ing. The story of beriberi and polished rice, of wheat and scurvy (see our editorials) shows that a small addendum of various foods completely averts these abnormal effects. We spoke, in our editorial on bread, of the rôle of this food as a part of the dietary and in relation to its digestibility. Surely we would not recommend a salt-free dietary of patent flour bread alone as an ideal regimen for man; neither would we recommend wheat alone, or rice alone, or beans alone, or any other one-sided dietary. Has not our correspondent gone out of his way to inject into the editorial under discussion implications in no wise introduced in the contribution itself?

We quite agree that there is a "large question" at issue in respect to the real "value of food salts normally found in cereals" or other dietary articles. We are not prepared to admit that the time is ripe for attempting to create a public sentiment about matters which need a great deal of further investigation by scientific methods before any authoritative pronouncements can be made. Some of the therapeutic claims for bran, bran breads, and allied products which are now liberally advertised are quite as much in need of revision, we fancy, as are other outcomes of speculative dietetics. These topics deserve investigation as thoroughly as do the conflicting claims of drugs.

Physical Therapy and Psychic Influence

To the Editor:—There is need of commentary on certain remarks reported in the discussion on Dr. Philip Marvel's paper on physical therapeutics, THE JOURNAL, Sept. 7, 1912, p. 757.

It is there said: "Remedial agents other than drugs . . . are of value from the standpoint of psychotherapeutics, the influence of mind over disease. They enable us to impress on the patient the fact that we have a knowledge of many methods of treating disease. Again, these various treatments interest the patient. This meets competition by quacks, or those who are not considered quacks but irregular practitioners, who know little medicine but understand human nature. When you order for your patient medicine in a glass of water and tell him to take a teaspoonful every few minutes, the patient is then made to do something for himself. A regular practitioner too often orders for his patient a certain drug and tells him to take it three times a day, which is all that is required by science, but something has been left out which would be for his betterment, namely, keeping him busy."

Strong protest against these points of view is evidently needed, for what they advocate is not psychotherapy at all in the scientific sense. It is the crudest suggestion, and it is false in leading the patient to believe that the cause of his cure is the physical agent itself which was employed. This does harm in blinding him further to the real nature of his disease and treatment whether mental, emotional or somatic. Also it fails to do the good of preventing similar attacks in future. In this respect it is even inferior to the much-berated error which teaches the ignoring of all bodily sensations whatever; for this often does abrogate suggested maladies. In short, it differs not a whit except by inferior effectiveness from the veriest charlatanry. This argument for any therapeutic measures is frequent in the mouths of loose thinkers; but its advocacy, if serious, by a teacher in a medical school, is cause for astonishment, for real psychotherapy is at least five years old in America.

In the art of psychotherapy there is no need to foment interest: that, as every physician knows, is already so active in many neurotics as to be a byword. Were the patient not preoccupied by his symptoms, it would indeed be strange; he is merely trying to understand himself. It is the psychotherapist's task to show him how. This cannot be done by apparatus, or even by sympathy or tact, but only by comprehension and enlightenment.

To tell a patient with hasophobia that he should stand is to tell him what he knows; to tell him that he can stand is to tell him what he knows to be wrong even when an electric battery "persuades" him into it; but to tell him why he cannot stand is to give him the compass whereby he will be enabled to stand again, sometimes, it is true, only after proper reeducative discipline. Similarly, to massage, faradize and rest a hand which cannot write from scrivener's palsy, "hoping the psychic effect will be good even if the affection is not peripheral," is to court failure (see *Jour. f. Neurol. u. Psychol.*, Leipsic) and drive patients to the cults who do this kind of "psychotherapy" incomparably more effectively. The real psychotherapist ascertains the psychologic mechanism of the dyskinesia, and teaches the patient, through understanding this, how to overcome the disability by properly devised and graded exercises in control.

When real psychotherapy is being performed, the impression on the patient can be left to take care of itself, as can the much-talked-of personality of the doctor. Who looks at his surgeon or cares about the impression he makes if his reputation for skill is great? Psychotherapy is mental surgery; it is not the impression but the knowledge and skill which count.

These statements I can vouch for in instances in which the crude suggestions of apparatus or other placebo, assurance or assumed sympathy had previously failed. Their theoretical soundness is a more complex thesis which interested readers will find outlined in the *Journal of Abnormal Psychology*.

Need I add that physical measures need no support from suggestions? They are effective in themselves when properly applied; each form has its own indications in modifying bodily processes apart altogether from the psyche of the patient; and I agree with Dr. Marvel regarding the pity of their too general neglect.

TOM A. WILLIAMS, M.D., C.M., Washington, D. C.

The Stewart and Ryfkogel Methods in the Surgery of Epithelioma of the Lip

To the Editor:—The article on "Operation for Epitheliomas of the Lower Lip," by Dr. Ryfkogel (THE JOURNAL, Feb. 15, 1913, p. 507), condemns my operation for cancer of the lower lip on grounds which I think do not exist.

After admitting that my operation fulfils the conditions necessary in an ideal operation, Dr. Ryfkogel goes on to say that the "resulting infection and sloughing is frequently extensive and severe, so that death has not infrequently occurred." As far as I am able to learn this is not true, and Dr. Ryfkogel is either misinformed or has had some very unfortunate experiences. I have personal knowledge of about four hundred operations of this type by several operators, and in not one has either sloughing or death occurred, or severe infection.

In the earlier days of the operation slight infection from the mouth through Wharton's duct occurred quite regularly, but lasted only a few days and did no harm when drainage had been provided. Lately this has been avoided by using twenty-day chromic gut to ligate Wharton's duct. In my experience patients sit up the second day, part of the stitches are removed the third day and the balance the fifth, and they can be discharged on the eighth to tenth day.

Dr. Ryfkogel in his article makes no statement as to the removal of the lymph-nodes, and it must be inferred that this is very incomplete, as he excludes the submental region and by preserving the facial arteries prevents the removal of the submaxillary salivary gland.

Now I have frequently found the submental nodes infected by carcinoma of the lip, and the removal of the submaxillary salivary gland has been proved necessary on account of the lymph-node which regularly is in very close relation to or imbedded in this gland, and which is one of the earliest nodes to become infected. Any operation that fails to remove all these lymph-nodes is incomplete and must have a large recurrence rate.

I cannot understand why sloughing should ever occur in this operation, as the facial flaps are abundantly nourished even when both facial arteries are ligated. Of course, bungling work can cause both sepsis and sloughing, but there is no excuse for this and it cannot rightly be charged to the operation.

J. CLARK STEWART, M.D., Minneapolis.

A proof of the above was sent to Dr. Ryfkogel, who replies:

To the Editor:—I fear Dr. Stewart has not read my article very carefully, for I state that two weeks after the removal of the lip, I do a radical dissection of the cervical lymph-nodes including the submental and submaxillary. At the second operation the facial arteries are cut; but as the flaps are now healed in place their preservation is no longer necessary. To save space I referred to a previous article in which I advocated a very thorough neck dissection in these cases, and as I do not like to have such an extensive wound in continuity with the mouth, I do a two-step operation. I also remove the lip wide of the growth, and my operation permits this by allowing full use, without tension, of the loose skin of the neck. In Dr. Stewart's original article he states that there is sometimes "an offensive suppuration" following his operation; such suppuration is, in my experience, often accompanied by sloughing in the wound. Dr. Stewart misunderstood in thinking that I stated that sloughing of the flap occurs in his operation, for I have not known this to happen. It is certainly remarkable, however, that 400 consecutive neck dissections that have been at all extensive and extend into the mouth should all heal without accident, such as shock or sepsis, even when the mouth has been excluded by careful suturing. A death observed by me occurred in a case of a man of 65 years with an extensive lip cancer. The neck dissection and lip plastic were quickly done after Stewart's method. Wharton's duct was ligated, and drainage thoroughly established. The offensive suppuration mentioned by Dr. Stewart quickly occurred, and notwithstanding free opening of the wound, death took place. If a surgeon believes that a given case is suitable for a one-step operation, Dr. Stewart's should be adopted, because mine can be performed only in two steps. If, however, he desires to do the operation in two stages and have ample tissue for a new lip without tension, I believe that mine will be the most satisfactory.

H. A. L. RYFKOGEL, M.D., San Francisco.

Proposed Addition to the Hippocratic Oath

To the Editor:—As the time for the graduation of medical students approaches it has occurred to me that an acceptable addition to the Hippocratic oath might be made which cannot fail to meet the approval of medical men.

It is generally admitted that the hardest knocks which physicians have to bear come from other medical men; and while nothing libelous need be said, much can be conveyed. The whole ground has been so beautifully covered in such classic phrases that one can see that only good would result from reading the following lines to those about to have to deal with other physicians. The following relates particularly to all instances in which physicians are asked their opinions of their fellow practitioners:

> That you, at such times . . . never shall
> With arms encumber'd thus, or this head-shake,
> Or by pronouncing of some doubtful phrase,
> As, *Well, well, we know*; or, *We could, an if we would*;
> Or, *If we list to speak*; or, *There be, an if there might*;
> Of such ambiguous giving out, to note
> That you know aught of [him]: this not to do,
> So grace and mercy at your most need help you,
> Swear. —Hamlet, I, 5.

Surely the necessity for the care of the reputation of one's fellow practitioners could not be more forcibly impressed.

L. MILLER KAHN, M.D., New York.

The Lister Memorial

To the Editor:—The movement for the establishment of memorials to the late Lord Lister in Great Britain is moving on apace. The memorials consist of a statue in Glasgow and the preservation of the Lister ward in the old Royal Infirmary, which is being rebuilt; but the proposition is to retain Lister's ward in its original state and install there a museum which shall contain everything that can be gathered relating to the early work of Lord Lister. In London there will be a statue, a tablet in Westminster Abbey and also an international fund for the purpose of awarding premiums to specially eminent surgical work in any country in the world.

I am glad to say that as a result of my letter in your issue of January 25, p. 308, I have already received nearly $700 in pledges and in cash. The checks have ranged from $5 to $100. When the matter is brought to the attention of the various national societies, I hope to see this sum largely increased. For the honor of the profession in this country and as an expression of appreciation of the wonderful work that Lister did for our profession and for humanity, it ought to be and I hope it will be multiplied several times over.

W. W. KEEN, M.D., Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FRENKEL TREATMENT IN LOCOMOTOR ATAXIA

To the Editor:—Please tell me what you can about the merits of the Frenkel treatment for locomotor ataxia.

R. M. WILEY, M.D., Salem, Va.

ANSWER.—In 1897 Frenkel (the name is frequently misspelled Frankel and Fraenkel) gave to the world a rather complicated system of exercises for tabetics, in order to relieve one of the troublesome symptoms, the ataxia. Frenkel's method, now considerably simplified, consists essentially in the systematic performance of simple movements with purposeful intent and attention, calculated to overcome incoordination by so reeducating the cortical centers that their work may subsequently be performed without attention and conscious volition. The exercises may properly be considered a series of cerebral gymnastics—not gymnastics by force—which any physician can devise to suit his individual case. The employment of this method is limited to the relief of one of the numerous symptoms of tabes, the incoordination, but has no appreciable effect on either the disease as a whole or on any of its other symptoms. In those cases, then, in which the symptom ataxia is present and in which the employment of Frenkel's exercises is not contraindicated, it constitutes a valuable addition to the symptomatic treatment of this disease.

RECIPROCAL RELATIONS OF MINNESOTA

To the Editor:—A physician graduated from a reputable medical college and obtained a license in 1898 to practice medicine in the state of Minnesota. In what other states in the Union can he practice medicine without passing any examination? E. L.

ANSWER.—If his credentials are otherwise satisfactory, he is eligible for a license through reciprocity in Arkansas, Colorado, Delaware, District of Columbia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, North Dakota, Ohio, Tennessee, Texas, Utah, Vermont, Virginia, Wisconsin and Wyoming, since it is reported that Minnesota has reciprocal relations with those states.

ANIMAL INOCULATIONS

To the Editor:—1. What doubtful diseases will guinea-pig inoculations aid in diagnosing?

2. Give technic of such inoculations as can be carried out by the general practitioner.

3. Mention sites for inoculations.

4. State the time period for development of infection in a given disease suspected.

5. Specify infective mediums (secretion or excretion) that best lend themselves for inoculation. J. E. K.

ANSWER.—1. Animal inoculations, especially in guinea-pigs, are used to determine the pathogenic character of microorganisms obtained by the culture of various secretions, and especially for the demonstration of the tuberculous character of certain lesions in which tubercle bacilli are not readily demonstrated by other laboratory methods.

2. Guinea-pigs and rabbits are usually inoculated in the thigh or abdomen; rabbits may be inoculated intravenously through the large dorsal vein of the ear. The material which is believed to contain germs of tuberculosis may be inserted under the skin or rubbed up with a sterile liquid, such as a salt solution, and injected in the peritoneal cavity. A Koch syringe

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or an ordinary hypodermic syringe may be used for such purposes. Before use, the syringe with the needle should be boiled for ten minutes to sterilize it. The injection should be made with strict aseptic precautions.

3. As said above, a hypodermic injection in the thigh or abdomen may be made, or material may be implanted under the skin or in the abdominal cavity. Frequently also the eye of the rabbit is utilized for the injection of supposed tuberculous material, because the progress of the lesion can be readily observed in this situation.

4. The period for development of the disease will vary with the material under examination. Ordinary septic infections show their results quickly, sometimes within twenty-four hours. On the other hand, tuberculosis may not be manifest for a number of weeks.

5. As a rule, a culture of some of the microorganisms present in the diseased part, or in the secretions from it, should be used. When a diagnosis of a doubtful tuberculosis lesion is desired, a part of the affected tissue, such as an excised gland, must be rubbed up and injected directly.

LITERATURE ON INTRATHORACIC SURGERY

To the Editor:—Please refer me to some late papers on the present status of intrathoracic surgery. W. F. R.

ANSWER.—The following articles on intrathoracic surgery have been published within the past two or three years in THE JOURNAL and elsewhere:

Bancroft, F. W.: Lung Surgery, *Colorado Med.*, May, 1910.

Elsberg, C. A.: Intratracheal Insufflation (Meltzer); Its Value in Thoracic Surgery, *Ann. Surg.*, July, 1910.

Lilienthal, H.: First Case of Thoracotomy Under Anesthesia by Intratracheal Insufflation, *Ann. Surg.*, July, 1910.

Quinby, W. C.: Surgery of the Throat, *Surg., Gynec. and Obst.*, November, 1910.

Babcock, W. W.: A Pneumatic Shield for Operation on the Lung, THE JOURNAL, July 2, 1910, p. 11.

Meyer, W.: Impermeable Cardiospasm Successfully Treated by Thoracotomy and Esophagoplication, THE JOURNAL, May 20, 1911, p. 1457.

Senour, W. E.: Present Status of Surgery of the Thoracic Cavity, Experimental and Applicable, *Kentucky Med. Jour.*, January, 1911.

Upcott, H.: Recent Work in Thoracic Surgery, *Practitioner*, London, June, 1911.

Munford, J. G.: Thoracic Surgery, *Boston Med. and Surg. Jour.*, Sept. 14, 1911.

Elsberg, C. A.: Experiences in Thoracic Surgery Under Anesthesia by the Intratracheal Insufflation of Air and Ether, *Ann. Surg.*, December, 1911.

Bunnell, S.: The Use of Nitrous Oxid and Oxygen to Maintain Anesthesia and Positive Pressure for Thoracic Surgery, THE JOURNAL, March 23, 1912, p. 835.

Flint, J. M.: Physiologic Basis of Thoracic Surgery, THE JOURNAL, Sept. 7, 1912, p. 760.

Robinson, S.: Apparatus for Thoracic Surgery Under Intratracheal Insufflation or Positive Pressure, *Surg., Gynec. and Obst.*, May, 1912.

Boothby, W. M.: Intrathoracic Surgery: Division and Circular Suture of Thoracic Aorta, *Ann. Surg.*, September, 1912.

Bryan, W. A.: Recent Advances in Thoracic Surgery, *Jour. Tennessee State Med. Assn.*, November, 1912.

STATE ASSOCIATIONS DO NOT INSURE AGAINST BUT DEFEND MALPRACTICE SUITS

To the Editor:—Will you oblige me by publishing in your columns a list of the state medical societies which have any system of insurance against malpractice suits for their members?

T. H. ROGERS, Providence, R. I.

ANSWER.—According to the best information available, no state society provides such insurance but the associations in the following states defend their members or assist them in their defense when subjected to suits for malpractice: California, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Vermont, West Virginia and Wisconsin.

PROCHOWNICK DIET IN PREGNANCY

To the Editor:—Please give a diet for a pregnant woman, so as to influence size of child. The patient has always had very large children and hard labors, so I want to aid if possible in having a small child. JOHN F. MILLER, M.D., Andover, S. D.

ANSWER.—Prochownick (*Therap. Monatsh.*, 1901) advised the following, begun ten to twelve weeks before the expected birth:

Breakfast: One small cup of coffee, 3 ounces (100 c.c.); zwieback or bread, 1 ounce (25 gm.); a little butter.

Dinner: Any kind of meat, eggs or fish, with little sauce; green vegetables prepared with fat (as cream); salad; cheese.

Supper: Same as dinner, with from 1 to 1½ ounces (from 40 to 50 gm.) bread, and as much butter as desired.

Absolutely forbidden.—Soups, potatoes, desserts, sugar, beer, and overdrinking of water.

If the patient is accustomed to the use of alcohol, a small bottle of red or white wine is allowed, from 9 to 12 ounces (300 to 400 c.c.), or an equal quantity of water may be taken during the day. This diet appears to have stood the test without modification. Recent authors on obstetrics advise it in cases with contracted pelvis. The diet was described more fully in THE JOURNAL, Oct. 28, 1911, p. 1474.

REFERENCES TO THE LIFE AND WORK OF LISTER

To the Editor:—What can I find of the early life of Lord Lister, the details of his discovery of antiseptic surgery, and all other things pertaining to him? I should like to get these data as I wish to write an address using him as a subject.

R. E. FORT, M.D., Nashville, Tenn.

ANSWER.—Some good references on Lister are as follows:

Lister Jubilee Number, *Brit. Med. Jour.*, 1902, ii, p. 1817.

Symposium of Papers on the Late Lord Lister, read before the Academy of Medicine, Toronto; seventy pages; reprinted from the *Canadian Jour. Med. and Surg.*, May, 1912.

Marcy, H. O.: Personal Reminiscences of Lord Lister, *Am. Jour. Surg.*, March, 1912.

Sendon, A. A.: Lister, His Life and Work, Australasian *Med. Gaz.*, March 16, 1912.

TEST FOR UROCHROMOGEN IN URINE

M. L. Stevenson, M.D., Covington, La.: See THE JOURNAL, March 1, 1913, p. 689.

INFLAMMATION OF THE GALL-BLADDER

To the Editor:—In your answer (March 8, 1913, p. 770) to the inquiry of M. V. S., relative to a gall-bladder case in which he had operated, which caused pain every time the sinus closed, you say, "the trouble lies in the fact that the inflammation of the gall-bladder has not subsided entirely."

In the main I agree with the statement, but I do not think that any further drainage is indicated or will alleviate matters. There is likely some obstruction of the cystic duct, and no amount of external drainage will overcome that.

Cystic duct obstruction is evidenced not only by the refusal of the sinus to stay closed without causing pain, but also by the fact that no bile escapes; nothing but mucus. Now a cystic duct that will not admit bile to the gall-bladder will not allow the passage of mucus and inflammatory products in the normal way, through the common duct to the duodenum.

When the sinus closes an infected retention cyst is produced, in effect.

Inasmuch as this state of affairs has been present for about a year, the most logical treatment, it seems to me, would be the removal of the mucous membrane of the gall-bladder, or if this is not feasible a cholecystectomy.

WILLIAM E. GROUND, M.D., Superior, Wis.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

SUMMARY OF PUBLIC-HEALTH LEGISLATION

A tabulation of reports received from the forty-one legislatures which have met since January 1 shows that up to date 426 bills on health topics have been introduced. This includes 34 amending existing board of health laws; 12 on vital statistics; 94 on the regulation of the practice of medicine, amendments to existing practice acts or bills providing boards for some special sect; 8 on registration of nurses; 6 each on the regulation of dentistry and pharmacy; 37 on the regulation of foods and drugs, habit-forming drugs, etc.; 9 bills on milk and dairy regulation; 55 on the control of disease; 21 on the sanitary construction of public buildings, etc.; 6 on occupational diseases; 6 on quarantine provisions; 20 on the care of the insane, feeble-minded, epileptic, etc.; 31 on marriage, eugenics, sterilization of criminals, etc.; 10 on vaccination, serums, etc.; 10 on water-supply and sewage-disposal; 3 on medical expert testimony; 14 on health supervision of schools; 3 antivivisection bills and 26 bills on miscellaneous subjects.

The large number of bills on different phases of the regulation of the practice of medicine shows the amount of agitation as well as the unsettled condition of public opinion on this subject. It is also significant that bills on this subject have been introduced in more of the legislatures in session than on any other one question, thirty-one of the forty-one legislatures in session having some bills on some aspect of this question now before them.

The next most important subject, numerically speaking, is the regulation of diseases, there being fifty-five bills on contagious diseases and their control, and on the prevention of disease. The fact that thirty-five bills on eugenics, marriage and sterilization have been introduced, shows the large amount of public interest in this question. Most of these bills have originated with laymen rather than with physicians. The thirty-four bills amending the board of health laws are mostly amendments strengthening the law. The bill in Arkansas, which has now become a law, creates a new state board of health. The fact that there are thirty-seven bills on food and drugs and habit-forming drugs is sufficient evidence of the public attitude on this subject.

The number of bills on public health subjects introduced in legislatures this year probably exceeds that of any preceding year. The thoughtful observer must be impressed with the waste of energy and the small results produced by our present lack of system in legislative matters. Bills are drafted hastily without adequate information or careful inquiry. They are introduced without sufficient consideration of phraseology or of possibility of enforcement or of conformity with existing laws. Bills are too often considered, both in committees and on the floor of the legislature, from a partisan, sectarian and personal point of view rather than from the point of view of the public good. Even when a carefully drawn and effective bill is introduced, it is too often emasculated and made inoperative and worthless by compromises which are necessary in order to secure its passage. These faults are characteristic of all American legislation. The medical profession, which is supposedly scientific by instinct and training, and which is supposedly working for the public good, ought to set a better example to the lawmakers than it has done in the past twenty-five years.

LEGISLATIVE NOTES

ARKANSAS

Following the passage of the bill creating a state board of health, referred to in THE JOURNAL last week, a bill was introduced appropriating the necessary funds for its operation. The day before the legislature adjourned the house tabled the appropriation bill. A few hours after this action was taken the governor began to receive telegrams from one of the northern counties of the state, saying that an epidemic of cerebrospinal meningitis had suddenly broken out, and asking the governor to send help at once. The governor immediately turned these telegrams over to the members of the legislature. By a peculiar coincidence, the member of the house representing the county in which the epidemic had broken out had been one of the most active opponents of the appropriation bill. On learning the situation in his county he at once moved to reconsider the motion to table, which was carried by an overwhelming vote. The next morning the appropriation bill passed without opposition.

The bill appropriating $36,000 for the medical department of the state university also became a law. The optometry bill and the chiropractic bill failed to pass.

COLORADO

The tuberculosis bill, making this disease reportable and requiring disinfection of houses in which tuberculosis has occurred, has passed both senate and house and is now before the governor. The sterilization bill has failed to pass the house. The chiropractic and osteopathic bills have passed the senate.

NORTH CAROLINA

The model bill on vital statistics has become a law. It carries with it an appropriation for $10,000. The general appropriation for the State Board of Health has been increased $8,500, making the total health appropriations amount to $46,000.

OREGON

The following bills on public health subjects have passed both houses, and have been signed by the governor: H. B. 69, providing for the sterilization of feeble-minded, imbeciles, insane and habitual criminals; H. B. 92, providing for the inspection of all hospitals and sanatoriums both public and private by the state board of health; H. B. 279, requiring a medical certificate of freedom from diseases from men desiring marriage license; S. B. 21, placing all charitable institutions, orphanages, maternity homes, etc., under the jurisdiction of the State Board of Health, and providing $10 per capita from the state funds for all orphans in these institutions; S. B. 298, making it a misdemeanor to deface or destroy any notice posted by the State Board of Health; H. B. 125, providing $5,000 annually for the study of bubonic plague in China, the work to be done under the auspices of Harvard University; H. B. 191, appropriating $10,000 a year to be used in promoting knowledge on social hygiene. H. B. 424, amending the medical practice act, and S. B. 200, prohibiting quack advertising, have already been commented on.

UTAH

S. B. 107, an optometry bill, has been killed in the house; H. B. 42, a sterilization bill, was killed on the floor of the house; S. B. 156, establishing a sanitary commission, was killed in the senate. The legislature adjourned Saturday, March 15.

TEXAS

The optometry bill has been killed by the senate, 19 to 6.

PROFESSIONAL MEN AS CANDIDATES FOR THE SUCKER LIST

How do these gold brick pedlers know that you are one of that species, a representative of which is born every minute?

This pointed question is asked by John Oskison, financial editor of Collier's *Weekly*, writing in the Chicago *Tribune*. He answers his question thus:

No sucker fisherman could afford to go on the theory that all are possible suckers and send his bait around indiscriminately. It would cost too much. So to qualify as a real, grown up sucker you must get on a sucker-list.

If you are a teacher, a preacher or a doctor you are pretty sure to be tested by some one of the fishermen. After you bite once you are passed along—you become an asset to the whole tribe. Your name is worth anywhere from 10 cents to $10, depending on how readily you bite and the amount of money you have dropped into the pockets of the promoters who have had their chance at you.

The teacher, the doctor and the preacher are ideal suckers, says Mr. Oskison; their earnings are usually small, their families large, and their sense of duty highly developed. Perhaps you would conclude, therefore, that they ought to be the very ones to keep away from the bait. No; they see the cost of everything which represents a decent existence rising higher and higher, while their income mounts with exceeding slowness or not at all. They will save something—at any cost of self-deprivation. And when that saving amounts to a hundred dollars or more they become susceptible.

Many are so ignorant of business that when they read the sunrise-tinted literature of promoters they actually believe they have a fair chance to obtain 100 per cent. in a short time on their investment. Government figures show that last year 525,000 persons lost $120,000,000 to persons indicted for fraudulent use of the mails.

Mr. Oskison concluded that the only sure way to avoid being caught as a sucker is to stick close to the side of the bank or banker whose business is under the supervision of a state or national government.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 7-8. Sec., Dr. John Wix Thomas.
CALIFORNIA: San Francisco, April 1. Sec., Dr. Charles B. Pinkham, 929 Butler Building.
COLORADO: 612 Empire Building, Denver, April 1. Sec., Dr. David A. Strickler.
IDAHO: Boise, April 1. Sec., Dr. O. J. Allen, Bellevue.
MINNESOTA: State University, Minneapolis, April 1-4. Sec., Dr. Thomas S. McDavitt, Lowry Building, St. Paul.
MONTANA: The Capitol, Helena, April 1. Sec., Dr. W. C. Riddell.
NEW MEXICO: Santa Fe, April 14. Sec., Dr. W. E. Kaser, East Las Vegas.
OKLAHOMA: Oklahoma City, April 8. Sec., Dr. John W. Duke, Guthrie.
RHODE ISLAND: State House, Providence, April 3. Sec., Dr. Gardner T. Swarts.
WEST VIRGINIA: Huntington, April 14. Sec., Dr. H. A. Barbee, Point Pleasant.

Arizona January Report

Dr. John Wix Thomas, secretary of the State Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, Jan. 6-7, 1913. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 7, of whom 3 passed and 4 failed. For two candidates who failed the college and year of graduation was not given. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Rush Medical College	(1911)	87.5
Drake University	(1908)	81.7
Washington University, St. Louis	(1912)	82.4
FAILED		
Atlanta School of Medicine	(1907)	69.9
Tennessee Medical College	(1907)	48.4

Colorado January Report

Dr. David A. Strickler, secretary of the Colorado State Board of Medical Examiners, reports the written and oral examination held at Denver, Jan. 7, 1913. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 9, of whom 6 passed and 3 failed including 1 osteopath. Twenty-six candidates were licensed on presentation of satisfactory credentials including state licenses. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Denver Homeopathic College	(1908)	76.3
University of Colorado	(1912) 82.9, 86.4,	89.1
University of Michigan, Dept. of Med. and Surg.	(1909)	81.2
Kansas City Hahnemann Medical College	(1910)	81.5
FAILED		
Louisville Medical College	(1894)	62.9
University of Nebraska	(1902)	66.7

LICENSED ON PRESENTATION OF SATISFACTORY CREDENTIALS

College	Year Grad.	State Licenses
Rush Medical College (1892) Nebraska;	(1903)	Illinois
Medical College of Evansville	(1881)	Indiana
University of Louisville, (1882) Kentucky;	(1893)	Kentucky
Kentucky University	(1904)	Louisiana
Tulane University of Louisiana	(1911)	Alabama
Baltimore Medical College	(1898)	Penna.
University of Maryland	(1908)	Minnesota
University Medical College, Kansas City (1898)	(1907)	Missouri
Lincoln Medical College	(1904)	Nebraska
Kansas City Medical College	(1905)	Kansas
Bellevue Hospital Medical College	(1886)	Missouri
Ohio Medical University	(1904)	Ohio
Ohio-Miami Medical College	(1911)	Ohio
Miami Medical College	(1880)	Illinois
Cleveland College of Physicians and Surgeons	(1890)	Ohio
Jefferson Medical College	(1911)	Iowa
University of Tennessee	(1894)	Tennessee
University of Nashville	(1900)	Tennessee
University of Vermont	(1911)	Vermont
Medical College of Virginia	(1908)	Virginia
Milwaukee Medical College	(1901)	Nebraska
University of Helsingsfors, Finland	(1907)	Mass.
Royal University of Palermo, Italy	(1894)	Connecticut

Minnesota January Report

Dr. Thomas S. McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the written and oral examination held at Minneapolis, Jan. 7-10, 1913. The number of subjects examined in was 18; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 6, of whom 5 passed and 1 failed. Twelve candidates were licensed through reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Rush Medical College	(1912)	85
Harvard Medical School	(1910)	87
University of Minnesota, College of Med. and Surg.	(1912) 85,	89
Jefferson Medical College	(1909)	88
FAILED		
Milwaukee Medical College	(1909)	65

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College (1908) Wisconsin;	(1911) (1912)	Illinois
Northwestern University Medical School (1904) (1911) (1912) Wisconsin.		Illinois;
College of Physicians and Surgeons, Chicago	(1897)	Wisconsin
Chicago College of Medicine and Surgery	(1907)	Iowa
Hamline University	(1909)	N. Dakota
St. Louis University	(1906)	Illinois
University of Pennsylvania	(1910)	Maryland
Milwaukee Medical College	(1912)	Wisconsin

North Dakota January Report

Dr. G. M. Williamson, secretary of the North Dakota State Board of Medical Examiners, reports the written and oral examination held at Grand Forks, Jan. 7-10, 1913. The number of subjects examined in was 13; total number of questions asked, 116; percentage required to pass, 75. The total number of candidates examined was 13, of whom 9 passed and 4 failed. Six candidates were licensed through reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Northwestern University Medical School	(1911)	81.5
University of Minnesota, College of Med. and Surg.	(1912) 82,	84.7
Hamline University	(1907)	79
University of Pennsylvania	(1910)	80
Jefferson Medical College	(1910) 82.5; (1911)	81.6
University of Nashville	(1901)	80.5
University of Toronto, Ontario	(1910)	78
FAILED		
College of Physicians and Surgeons, Chicago	(1911)	70
Keokuk Medical College, College of Phys. and Surg.	(1903)	69
Laval University, Montreal, Canada	(1911) 71; (1912)	66.2

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College	(1907)	Illinois
College of Physicians and Surgeons, Chicago	(1908)	Illinois
Bennett Medical College	(1910)	Minnesota
University of Minnesota, College of Medicine and Surgery (1908)	(1909) (1910)	Minnesota

Disinfection in Measles.—The New York City Department of Health does not remove goods for sterilization in carrying out disinfection after measles. It is said that experience has shown that there is little likelihood of any infection from the sick-room when the person suffering from measles has completely convalesced; the main danger is from fresh discharges. This change in the method of disinfection is appreciated by the public, and the absence of secondary cases justifies it. The abandonment of terminal fumigation after recovery from measles or diphtheria has diminished the work of the disinfection corps by 20 per cent. After the recovery of the patient at home the woodwork of the room in which the patient was isolated is thoroughly scrubbed with hot soda solution (½ pound to 3 gallons) and the room is thoroughly aired for at least twenty-four hours before being occupied. If the patient is removed from the sick-room during the height of the illness, or dies at this period, the room and its contents are disinfected and all goods exposed to the infection are removed to the disinfection station and disinfected by steam.—January *Bulletin* New York City Department of Health.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, MINNEAPOLIS, JUNE 17-20

Alabama State Medical Association, Mobile, April 15-18.
American Urological Association, Boston, April 15-17.
California State Medical Society, Oakland, April 15-17.
Georgia State Medical Association, Savannah, April 16-18.
Louisiana State Medical Society, Baton Rouge, April 22-24.
Maryland Medical and Chirurgical Faculty, Baltimore, April 22-24.
Mississippi State Medical Association, Vicksburg, April 8-10.
New York State Medical Society, Rochester, April 29-May 1.
South Carolina State Medical Association, Rock Hill, April 15-17.
Tennessee State Medical Association, Nashville, April 8-10.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Twenty-Third Annual Meeting held in Chicago, Feb. 26, 1913

(*Concluded from page 859*)

Some Problems in Medical Education

DR. EGBERT LEFEVRE, New York: During all the years of its existence, the policy of the association has been to consider the question of medical education from the point of view of those who were actively engaged in medical education and who had knowledge of all its phases, technical, pedagogic and geographic. At present there is great need for such a body. Two general educational remedies have been advocated by organizations concerned with medical education: (1) that one or two years of college work, which should include one year of chemistry, physiology and biology, be added to the preliminary training; (2) that a hospital or a clinical year be added, making the medical course one of six years. The questions for this association to decide are not merely academic, but questions of administrative standards.

The first question that arises is how the student is to obtain the year's work in the sciences demanded by the American Medical Association in the action taken by its House of Delegates in 1912. In states with state colleges or universities the question has been answered. The high-school and university courses are so correlated that with a minimum amount of disturbance the students pass from one to the other. But in the greater part of the country no such coordination exists. In some states students are admitted only on examination in addition to their credits; others demand special preparation in subjects not included in the high-school course. Universities should feel it their duty to correlate their entrance requirements with the high-school courses of their locality. Universities do not want students preparing for medical-school requirements, because they object to acting as a preparatory school for technical or professional education. This raises the question of equivalents and the dangers of evasion. It has been suggested that courses in chemistry, physiology and biology be given in technical schools, which would not admit students until after the completion of a high-school course, and it has been asserted that such a course would be more definite than that given in many literary colleges, because it would be under the supervision of the educational department of the state.

What is the object of this added year of preparation? In general terms, the answer is "power to grasp professional subjects." This question has given rise to much debate, and incident to it, it has been stated that one year of college work is not sufficient time in which to teach these subjects as pure sciences. Others hold that it is sufficient time in which to gain a familiarity with the principles of these subjects. They should be taught in an intensive manner so as to arouse interest, to make the student feel that they have a bearing on his future work, and to widen his mental horizon and awaken his reasoning faculties. Unfortunately, the generalities of the college course do not often give this direction. The high-school graduate often gets more out of the course than the man with the A.B. degree. Medical colleges are in duty bound to demand of colleges that these courses be standardized—that they be made worth the student's time.

As to whether or not this added year will relieve the medical curriculum, the only answer to be made is that the ultimate aim of medical education is to make good practitioners of medicine. The medical school cannot turn out a "finished" product, but it can train its students so that they will be in a position subsequently to remedy their own deficiencies. The medical curriculum has reached the limit of its capacity. It has been formed almost altogether by accretion, something being put in, little or nothing taken out. If students come to the medical colleges with better preparations in the sciences there is a tendency to add more detail, to extend the laboratory courses, to teach subjects as pure sciences, to lose sight of the ability of the student, to go beyond the needs of the future practitioner and to plan the course as though they were to be chemists, pathologists or research workers. Opportunity should be given to those who wish to pursue a subject beyond the degree given in the course, but who cannot because of the rigid curriculum presented.

In our attempt to make the student scientific, we are defeating our object by insisting on this great detail before he can understand the principles. The reason students do not have a better grasp of scientific subjects is that medical education has become less homogeneous. The science years are becoming more and more divorced from the clinical. This tendency should be corrected. I believe that teachers of scientific branches are largely to blame for this. It is the result of evolution. They should be in thorough sympathy with the future professional work of the student, and I am of the opinion that teachers in medical schools should have a medical course as part of their training. Medical progress is being retarded by lack of coordination in the science and clinical departments. Instead of extending the course in physiologic science, a correlated clinical laboratory course should be introduced in the second year. This would be the best introduction possible for the clinical subjects. The establishment of state examining boards has raised the general standards of the profession and is responsible for a more uniform curriculum, but it has had a decided influence on the overloading of the curriculum; it has encouraged quiz-book methods and put a premium on ability to answer questions. State-board examiners should recognize the changes that have occurred in medical education. Practical examinations should be given. The states should consider it their duty to provide the necessary funds.

Divided Schools

DR. CHARLES R. BARDEEN, Madison, Wis.: Unless a medical school is an integral part of a university which is in a position to give financial support to a school, the equipment facilities are, with a few exceptions, inadequate. The fundamental need of affiliation with large public hospitals, dispensaries and public health work is likewise clear. The medical course falls into two subdivisions: (1) that of the basal medical sciences and (2) that of the clinical teaching. The teaching of the basal sciences may usually be organized most readily at the university center. The clinical teaching can be well established there only when large hospitals and dispensaries adjoin, as in Michigan, Minnesota or Pennsylvania. When the clinical teaching cannot thus be given, but can be given in the same city or within a few miles of the university center, the basal sciences are, as a rule, given in conjunction with the clinical teaching and the medical course, as at Northwestern, Harvard, Columbia and Western Reserve. At Indiana, Cornell and Texas the medical school is some distance from the university center, but work in the basal medical sciences is given in both places. The need of developing these sciences at the university center, especially in state universities, in connection with public health work, has led to the organization of "half schools," and divided schools. In a university where comparative vertebrate anatomy, histology, neurology, physiology, pharmacology, chemistry, bacteriology and hygiene are cultivated as important aspects of biologic science, the addition of human anatomy, pathology and physiologic chemistry so as to cover the first two years of the medical course is a simple and natural step. If, however, these subjects are to be taught students as a part of the regular course, it is important that they should at least be entrusted to men who have had a medical training and who are

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interested. It is also of great value to have at hand at least a small hospital in which interest in clinical medicine may be maintained and to have available some clinical material to demonstrate to students in the second year of the medical course.

In the divided school, in the usual sense, the clinical branches are taught in a city miles away from the seat of the university. As a rule, the division in work takes place between the second and third years of the course; but it may take place in the middle of the second year, as at Leland Stanford, or at the end of the first year, which is the aim at present in Indiana. There seems to be no fundamental reason why the work of a medical school should not be done in two or more places, provided the organization of the school is effectively centralized in a strong university. A fundamental thing is university support and control. If the remote medical school gives the complete work of the four years, some of the work of the first two years will have to be repeated at the university center; on the other hand, some non-medical science work may have to be given in the medical school. If the separation takes place between the second and third years, some clinical work should be given in the university center and the clinical division should cultivate some of the basal sciences, especially physiology and pathology. The line of separation need not, however, be between the second and third years. The main thing is to have university control and support. The question is not merely so much one of the division of the medical school as of the existence of the medical school. The problem is in each case a local one, but the university must control and support all of the teaching, and the work must be so organized as to save the student's time to the utmost. His time must not be used up in long daily trips from one part of his work to the other. Extreme centralization of a medical school makes for certain kinds of economy, but if this economy is attained by giving up the use of clinical material, it may be after all a false economy, and the university may fail to do its duty in promoting the highest service in public work.

The Fifth or Hospital Year

DR. WILLIAM PEPPER, Philadelphia: The state boards should decide on the merits of individual hospitals, should classify them and make a list of hospitals in which candidates could spend their intern year. It is becoming yearly easier to place graduates in satisfactory hospitals. We fail to see the necessity for the control of hospitals by medical schools. It is hopeless as well as useless to wait until each school owns or controls acceptable hospitals in which to place all of its graduates. I believe it not to be to the best advantage of a hospital to get all of its residents year after year from the same school. Too much inbreeding is a bad thing.

How will the fifth year requirement affect the student? In a small minority it will add to the difficulties, but it will affect most those needing better training, the poorly prepared man, and it is for these that this requirement is intended. The best men practically all take hospital positions now. As to the effect on the hospital, I believe that this will prove the entering wedge whereby we may expect to obtain better facilities for our graduates serving as residents in hospitals. The state board by classifying hospitals as acceptable and non-acceptable will direct the attention of managers to various inadequacies in the service, to lack of laboratory facilities, lack of proper records and innumerable other deficiencies that may exist. There also is the possibility of the state board demanding of acceptable hospitals the right to hold practical examinations in its wards and laboratories. Here is a chance in my opinion to institute real practical examinations. This alone would make the whole plan worth the trouble.

Medical College Organization

DR. WILLIAM C. BORDEN, Washington, D. C.: A properly conducted medical school consists of two main groups, the laboratory group and the clinical group. The work of the laboratory group requires a thoroughly equipped building or buildings, wherein the teaching in anatomy, physiology, chemistry, pathology and bacteriology and materia medica and pharmacology, with all of their various subdivisions, may be carried on effectively. The work of the clinical group requires one or more hospitals with sufficient ward facilities and one or more outpatient services, in all of which authoritative control of patients and teaching is had by the teacher in these divisions. An effective modern institution for teaching medicine must have adequate buildings and equipment, including a hospital and a dispensary, and it had best be a department of a university. It should be subject to the authority of the board of trustees and the executive, the president; but this authority should not extend beyond the necessary financial control of education and other matters such as the details of appointment to the medical faculties. The organization of a medical school is intended to give definite assignment of responsibility and authority to every teacher and administrative officer, and to have proper supervision by the responsible heads of the teaching groups, so that proper administration may be had and adequate instruction may be given, and this in such a way that friction may be avoided.

DISTRIBUTION OF RESPONSIBILITIES, AUTHORITIES AND STUDENTS

			Divisions	Subdivision	Students Year
Board of trustees President of the university	Executive section Executive committee Dean Chairman	1. Med. school 2. Hospital 3. Dispensary	Anatomy	Gross anatomy	1st
				Mic. anatomy	2d
				Embryology	1st
			Physiology	Normal	1st
				Pathologic	2d
				Hygiene	2d
			Chemistry	Inorganic	1st
				Organic	2d
				Physiologic	2d
				Clinical	3d
			Pathology	Pathology	2d
				Bacteriology	
				Clinical microscopy	
			Materia medica	Materia medica	2d
				Pharmacology	2d
				Therapeutics	3d
	Educational section Advisory committee Dean Chairman	Divisions of the faculty and distribution of students	Medicine	Physical diagnosis	2d
					3d
				General medicine	3d
					4th
				Dietetics	3d
				Pediatrics	4th
				Tropical medicine	3d
				Psychiatry	4th
				Neurology	4th
				Dermatology	4th
				Venereal diseases	4th
				Preventive medicine	4th
				Forensic medicine	4th
			Surgery	Minor	2d
				General	3d
					4th
				Surgical pathology	3d
				Orthopedic	4th
				Genito-urinary surgery	4th
				Radiography	4th
				Ophthalmology	4th
				Otology	4th
				Rhinology	4th
				Laryngology	4th
				Operative laboratory	4th
			Obstetrics		4th
			Gynecology		3d
					4th

The medical faculty should be governed by an ordinance or constitution which has to do with two main subjects: (*a*) the administration of the department; (*b*) its educational conduct. The administration is best placed in the hands of an executive committee with the dean as chairman and to include with others the professors of medicine and surgery, as representing the two most important clinical divisions. This executive committee is a subcommittee of the advisory committee of the university. The accompanying diagrams will give an idea of an organization, which has given great satisfaction in the past four years.

As the dean's office is the administrative center of the department of medicine, its organization and conduct are of great importance. Under the dean as the head of this department of the college there is (1) the secretary, who has charge of the work and the keeping of the students' records; (2) the superintendent of medical buildings, who has charge of the bookkeeper, the purveyor, the janitors and the engineer, the latter having charge of the firemen, carpenters and other workers; (3) the superintendent of the hospital, and (4) the director of the dispensary. That makes a very good division of the work of the dean's office.

RESPONSIBILITIES AND AUTHORITIES, UNIVERSITY HOSPITAL AND DISPENSARY

- Board of trustees
  - President of the university
    - Teaching section
      - Advisory committee
        - Dean
        - Dispensary
          - Director of the dispensary
            1. Assistant director
            2. Chief of the clinical division; assistant clinician
            3. Chief of the dispensary laboratory; assistants
            4. Skiagrapher; assistants
            5. Record clerk
            6. Nurses on dispensary service
            7. Orderlies, etc.
        - Hospital
          1. Chiefs of clinical division; assistant clinicians
          2. Chiefs of clinical laboratory; assistants
          3. Skiagrapher; assistants
    - Administrative section
      - Executive committee
        - Dean
        - Superintendent of the hospital
          1. Resident physician; interns
          2. Anesthetists
          3. Pharmacist
          4. Superintendent of nurses
             1. Head of nurses; ward supervisors; pupil nurses
             2. Operating-room nurse
             3. Special nurses (graduates)
             4. Orderlies
             5. Ward laborers
             6. Ward maids
          5. Stewardess
             1. Cooks
             2. Kitchen maids
             3. Dining-room maids
             4. Kitchen and dining-room laborers
          6. Assistant superintendent
             1. Bookkeeper
             2. Purveyor
             3. Record clerk
             4. Telephone and office attendants
             5. Engineer
                - Fireman
                - Carpenter
                - Electrician, etc.

Report of Committee on Pedagogics

The report of this committee, made by Dr. E. P. Lyon, the chairman, will be published in full in THE JOURNAL later.

FEDERATION OF STATE MEDICAL BOARDS

First Annual Conference held in Chicago, Feb. 25, 1913

On account of the illness of Dr. A. B. Brown of Louisiana, president, the vice-president, Dr. Charles H. Cook, presided.

Officers Elected

The following officers were elected: president Charles H. Cook, Natick, Mass.; vice-president, Albert de Bay, Orange City, Iowa; secretary-treasurer, O. V. Huffman, Albany, N. Y. Executive Committee, three-year term, James A. Duncan, Toledo; two-year term, J. M. Baldy, Philadelphia; one-year term, Herbert Harlan, Baltimore.

The next annual conference will probably occur in Chicago the last week in February, 1914.

The following boards were represented: Arkansas, eclectic; Arkansas, regular; Indiana, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, New York, Ohio, Pennsylvania, South Carolina, Vermont, Virginia and Wisconsin.

The following boards have paid the dues for charter membership, or have expressed a desire to become charter members, but were not represented at the meeting: Iowa, North Dakota, Oregon, Rhode Island and Utah.

The following became charter fellows of the organization: Emil Amberg, John P. Bennett, A. B. Brown, N. P. Colwell, Charles H. Cook, R. D. Copeland, Homer Dupuy, Espey M. Williams, W. P. Harlow, F. F. Lawrence, J. G. Martin, Murray Galt Motter, F. T. Murphy, George C. Tallerday, F. C. Waite, S. L. White, Fred C. Zapffe. Dr. John K. Scudder was elected an honorary fellow.

By action of the Executive Committee, the time for charter membership in the federation was extended to July 1, 1913. All boards desiring to become affiliated as charter members may do so by forwarding the dues, $25, to the secretary-treasurer. All those desiring to become charter fellows may, on the payment of $1, be so considered. Ex-members of state medical boards may, on application to the Executive Committee, become honorary fellows without payment of dues. Delegates from the United States Army, the United States Navy and the Public Health Service will be admitted to all sessions of the federation on the same basis as honorary fellows.

Should Medical Boards Require One or More Years of College Work?

DR. W. J. MEANS, Columbus, Ohio: The activities of medical boards are fixed largely by statutes. The provisions in most states, however, are quite liberal, and while they differ considerably in specifications, in the main the boards are given great latitude in the execution of their functions. Few medical boards have exercised their full power in any of their functions so far as my observation goes. This is especially true in the supervision of the preliminary educational course and in inspecting colleges. Their sins are those of omission rather than of commission. Medical boards can exercise a much broader supervision under the laws now existing than they do. It is certainly within their power to determine the value of preliminary educational requirements.

Without a uniform high school standard, honestly administered, it is folly to talk about higher requirements. Various high-school standards for admission have been set, but the evaluation of these standards varies more than do the standards. Personal mathematics with different rules of addition, multiplication and division seem to enter into the evaluation very largely. The New York Board of Regents, for example, maintains that its sixty counts are of more value in work required than the Carnegie fourteen units. The proportion, it is claimed, is six to five in favor of the New York standard. It is evident that the Carnegie Foundation has lowered the fifteen-unit standard. Its fourteen units may be made up from all sorts of subjects, none of which may have any scientific value. In other words, there are no required subjects, and medical colleges are taking advantage of this looseness, and state boards are being influenced by the college demands. Of much more importance than the number of units or counts is the subject-matter that makes up the credits. Graduation from a first-grade high school alone should not be the standard on which a medical certificate is granted. In New York the recent requirement of one year's work in chemistry, biology and physiology is specified work included in the sixty counts. It is raising the requirements in contents only.

The medical curriculum as it stands to-day requires preparation in addition to that of the high school. Without some training in chemistry, physics and biology, medical students are handicapped. These studies give the student the preparation which saves time when he enters on his medical work. The physician should have a broad liberal education, therefore his preliminary education should include a good knowledge of English and other cultural subjects, such as mathematics and foreign languages. The four years in high school are all too short to get the required educational training and the cultural education necessary to round out a professional career.

The physician's activities are not confined to the healing art. The problems of public health and the problems of citizenship must be met. From an educational point of view no good reason can be offered against a one or two years' college course. Two years is the ideal, one year the necessity. The poor-boy plea is no longer looked on as a reason for low requirements. That well-trained doctors prefer urban to rural practice is also no longer a truism, and rural districts are entitled to just as good treatment and as highly educated doctors as the cities. Physicians everywhere are better educated men now than they were years ago. My experience with the country doctors almost persuades me that efficiency in the healing art is more evident in the country than in the city. High standards will not deprive country districts of doctors. A physician who knows nothing but the issuing of drugs is of little value to any community. That higher education necessarily means expenditure of more time and more money will not deprive the people anywhere of needed medical attendance. It is the duty of state boards to be alert in exercising the power given them in maintaining high preliminary standards and in inspecting medical colleges, as well as their product. State boards should carry out the will of public sentiment as expressed by the organized interest in medical education. State medical boards must keep pace with public opinion.

Should Internship Be Required for Graduation?

DR. ISADORE DYER, New Orleans: There can be no question of the correctness of the proposition that a hospital experience is desirable for the man who intends to practice medicine, and that such a man is possessed of more efficient training than he who has not had such service. There is some question, however, as to the expediency of promulgating any rule requiring such service. We should have an intern year when we can offer it adequately. Until then we should not make a pretense of making a requirement which we know it will be impossible for the majority to satisfy.

The questions to be considered in this connection are: 1. In what particulars do medical graduates lack most for the practice of medicine? 2. Are there enough hospitals properly equipped and so administered as to allow this? 3. How can the college require an intern year if it cannot direct or apply the sort of service required, and how can it pass on a credit for an intern year unless the hospital and the intern are under the control of the college? 4. Further, what class of hospitals will be qualified to afford the required service and the required conditions?

Hospitals must either be standardized for educational purposes, or the intern year credited on some basis of work, according to which full or modified conditions may be allowed. At present it seems almost impossible to standardize the intern year. The ideal condition must presuppose the affiliation of the college with the hospital so as to allow direct supervision of the intern while engaged in hospital work. The intern must establish credits for systematic work in medicine, surgery, obstetrics, pathology and correlated subjects. Such a division of service will necessitate the arrangement of periods in the hospital, with rotating groups to different fields of work, changing every three or four months in order to cover all the clinical branches. The hospital administration must be willing to allow the intern service to be used for educational purposes as the first object, and to make second the business of the hospital, for the frequent changes of service among interns can hardly make for the greater efficiency in the administration.

The efficiency of the hospital intern grows greater as the service of the intern is concentrated on division of work. Therefore one year of service is of doubtful usefulness to the hospital, and of still more doubtful usefulness to the intern, especially if he is harassed by frequent changes in the assignment, which make of him an untrained man in each. The intern year, then, if made obligatory for licensure, should require service that makes for efficiency in the greatest number of subjects, and especially should argue that one year cannot create such efficiency under the existing organization of hospitals. The postgraduate clinic year is more likely to accomplish results than the intern year without proper supervision. The intern year is desirable for licensure if it can be made systematic, which at this time is not probable. Therefore any rule requiring an intern year is inexpedient, and if adopted would work a hardship on all but the graduates of a few colleges owning or controlling hospital service.

There should be an attempt at the gradual standardization of hospitals to educational purposes with the future expectation of correlating hospitals and colleges of medicine in each state. This will require large education of the lay community. Until such time a fifth practical clinical year should be required of medical graduates, and therefore should be required by the state boards of examiners. To make such a clinical year efficient, state boards of examiners should stipulate the detail and amount of practical clinical work in each branch to be taken as part of the application for a license before the candidate is admitted to an examination. Such a stipulation should include each branch of medical practice and the scope of training required.

DISCUSSION

DR. WILLIAM PEPPER, Philadelphia: The state board should say where the internship should be taken. The University of Pennsylvania does not want the control of students after graduation, nor does it want supervision of hospitals. The state board must have its form of examination and make it a practical examination conducted in the wards of the hospital.

DR. REUBEN PETERSON, Ann Arbor, Mich.: I favor the intern year, but before the matter is adopted as a requirement, the subject should be discussed carefully. No board or school has the right to demand a fifth clinical year without proper knowledge of hospitals and of what work should be done by the intern. This work should be part of the college curriculum, and the degree should not be granted until after a student has served his hospital year, so that the college will have full control of his time and work. Hospitals must be standardized and the work so arranged that the intern gains a fully rounded course, which may be of value to him in his practice.

DR. EGBERT LE FEVRE, New York: There are not enough places in hospitals for all medical graduates. The control of this question should reside with state boards. The service in most hospitals is two years, and a man who wants to serve only one year cannot secure a place. Will you demand gen-

eral service or accept special service done in special hospitals? I do not believe that we are ready at present to make this requirement obligatory, but we should give academic credit to every man who has taken such service.

DR. J. M. BALDY, Philadelphia: The plan in Pennsylvania is for the examining board to have full control of the hospitals. The medical student should not be considered. The community must be protected and the student must do what is necessary, so that when he enters on the practice of medicine he is competent to do so without doing injury to the community. The hospitals are badly organized to do this work, but a beginning should be made now. In the June examination in Pennsylvania, fifty-three men failed. Forty-two of these went into hospitals afterward, taking a six months' service. Eleven did not do this. Some of these eleven failed at a second examination, whereas of the forty-two who took hospital work only eight failed. The University of Pennsylvania gives a postgraduate course of which 50 per cent. is clinical, and the board approves of the course and accepts it as a substitute for internship.

Rules and Regulations Governing Examinations

DR. J. M. BALDY, Philadelphia: There are two different factors at work in making tests of would-be medical men: the schools and the state. The schools teach the medical student the tools and their functions. The state lays down a minimum course of instruction and tests the finished product. It does not test his knowledge of his tools but his knowledge as to the use of his tools, with a sufficiently safe assurance to render it proper for the state to turn him loose on an unsuspecting and unprotected community. The state board should not conduct examinations in chemistry, descriptive anatomy, physiology and other fundamental branches. These subjects are not of prime importance. The state should take over only the finished product and test it as an entity and not in detail. It is for this reason that after Jan. 1, 1914, the State Board of Pennsylvania will admit no applicants to its examinations, either from within the state or without, until a year of service in an approved hospital has been completed; nor will any one be admitted to begin practice in the state through reciprocity who after that date has not fulfilled that requirement. The state board should know whether the applicant is fit to practice medicine, not whether he is familiar with the fundamentals and the use of names, as distinct from practice.

DISCUSSION

DR. W. B. HINSDALE, Ann Arbor, Mich.: The function of the state is to protect its citizens by not allowing a person to practice medicine without a knowledge of the subject sufficient to render him safe in practicing. The applicant must show his ability to apply and correlate facts. Therefore questions must be so formulated as to test the applicant's originality and ingenuity in the application of the primary principles of medicine to concrete cases. Colleges are to be reprimanded for not teaching the sciences, and especially for merely trying to prepare students for examination. I do not believe that the time has come for the application of bedside teaching, but questions can be formulated in a blending of subjects of an acceptable nature as in the combined methods of the English examination.

DR. J. W. ANDREWS, Mankato, Minn.: If Minnesota followed the example of Pennsylvania it could not examine two-thirds of the graduates of the country. The time will come, however, when all state boards may adopt the conditions mentioned in the paper; but time must be given to work out these standards and to apply them.

DR. L. E. SEAMAN, Cleveland: Pennsylvania will surely occupy a unique place, and for many years to come the larger proportion of states in this country will be *persona non grata* with Pennsylvania.

DR. F. F. LAWRENCE, Columbus, Ohio: The paper is a practical one and leads up to what must come in this country just as it came in Great Britain, where the teaching institutions are not degree-conferring bodies. The teaching must be done properly in order that schools may continue their existence, and the state boards are the ones to pass on how well this teaching is being done.

DR. J. M. BALDY, Philadelphia: We expect that in Philadelphia within five or six years the examining functions of the board shall be a purely perfunctory one. The schools will continue the students from the freshmen into the sophomore year, will practically guarantee his studies and the examining board will simply have to visé his work.

CHICAGO SURGICAL SOCIETY

Regular Meeting, held Feb. 7, 1913

The President, DR. CHARLES DAVISON, in the Chair

Juxta-Epiphyseal Sprain and Sprain Fracture of the Lower End of the Radius

DR. KELLOGG SPEED: If the capsule tears or gives way the bone does not break, as a rule, but, as demonstrated by Ross and Stewart, the ligament is stronger than the bone or periosteum, and in the majority of tests on the cadaver pulls out the bone surface or causes by its line of stress a sprain fracture across the impact-receiving area. Stimson believes that too much stress has been laid on the supposed rupture of the internal lateral ligament in sprains at the wrist, for his experiments do not show this, except in cases with marked displacement.

Three causative mechanisms have been worked out: 1. Splitting or crushing by force from carpal bones. 2. Radius yielding at the weakest point by breaking up of the causative force. 3. Cross-strain exerted at insertion of capsular ligament, especially on the anterior aspect with the hand in dorsal hyperextension. The last-named factor has never been given its full value. What in one case will give merely the sprain with ligamentous damage, in another will cause epiphyseal or sprain fracture of the styloid process with little displacement and no comminution. Fracture force in distinct fracture causes the bone to break frequently in the line of epiphysis; and the lower fragment, forced on by a continuation of the pressure, is driven on up into the cancellous portion of the shaft, giving the impacted Colles'. As the swelling and soreness are often not great at first, and superficial examination gives no crepitus, no false motion and little deformity, which a sprain alone or a small hematoma might account for, these cases do not come to the hands of the surgeon at once, or if they do are not diagnosed.

Juxta-epiphyseal sprain may be as painful and result in as prominent objective findings. Crepitus excepted, one cannot clearly differentiate if the acute swelling has occurred, as the hematoma formed by the tearing loose of the ligamentous attachments at the wrist, all in the epiphyseal area, simulates the fracture deformity. Local pain on pressure and loss of function are at first as great in sprain with ligamentous laceration and hemorrhage as in true sprain fracture. Ross and Stewart, at the German Hospital in Philadelphia, in going over records found that 15 per cent. of all fractures confirmed by Roentgen ray were sprained fractures, and that in 1910, eleven of these were of the lower end of the radius, and that in 1911 there were seven in the same location.

As diagnostic signs, the following are sufficient: (1) history of sufficient trauma; (2) small sharply localized area of swelling and acute tenderness over attachments of ligaments at the lower end of the radius and ulna. The findings in sprain fractures (under 2) are pronounced and certain, recurring always at the same place when test is repeated, so that one can in 80 per cent. of cases make a clinical diagnosis before roentgenogram.

Treatment should be that of fracture. The wrist is immobilized from the base of the fingers to the elbow in a light plaster splint, the hand in comfortable position, generally slightly flexed, and the forearm midway between pronation and supination. After from ten to fourteen days the splint is removed, the arm massaged, and after the third week no support is needed. This avoids prolonged disability from sprains, excess of callus formation, and better satisfaction to the patient.

DISCUSSION

DR. E. WYLLYS ANDREWS: I do not see how any one can help being impressed with the methods described in this paper. An hour of this sort with the actual roentgenograms from cases is worth more than a whole treatise, such as Hamilton's or Scudder's, especially the former, before the days of roentgenograms. Now we have pictures of the bones as they actually are and can trace the line of fracture in any given case. We do not have to generalize and theorize about the mechanics of the causation, or whether the fracture is direct or indirect. We do not have to theorize about the mechanics of reduction and retention, or whether the fracture is epiphyseal or not, or impacted or not. It surprises me to find that such a large proportion of so-called sprains are actual fractures. We have known of cases of fracture of the shoulder-joint associated with rupture of the small fragments of the rim of the joint, and in the hip-joint we find them in dislocations and fractures of the neck, tearing and stripping off segments of bone.

DR. D. B. PHEMISTER: In children between the ages of 8 and 16, we frequently see what is known as a folding fracture. As a result of violence, the cortex in this location, which is still flexible, bends outward. It is not a green-stick fracture. Fracture occurs when the resistant cortex meets a flexible cortex, and the older the child, the nearer the bone is to the epiphysis; between the ages of 8 and 15 it is located an inch and a half above the joint. In an adult the bone will break, but in a child the cortex is still flexible, and as a result of impaction and slight flexion, the cortex bulges outward. I have had five cases of this type of fracture which I have seen in the last few years.

Bilateral Urinary Calculi

DR. DANIEL N. EISENDRATH: I have had two cases, and at the Michael Reese Hospital we have had five other bilateral cases. In one no operation was performed because the patient had a carcinoma of the uterus. In one case the renal calculus was removed, but the patient died some months later of a senile intercurrent disease before the opposite ureteral calculi could be removed. In one case no operation was performed, owing to an advanced pulmonary tuberculosis. In a fourth case the calculi were first removed from the right kidney by Dr. McArthur, and after an interval of three months an attempt to remove a left-sided calculus by the ureter through a pyelotomy incision was followed by such severe bleeding as to require removal of the kidney. This case has been reported elsewhere as showing one of the dangers of pyelotomy. The right remaining kidney continues to show negative shadows, and the patient is three months pregnant at the time this article is being written.

DISCUSSION

DR. L. L. MCARTHUR: There succumbed to operation at the Michael Reese Hospital two months ago a man from whom I removed a calculus a year before. It was so soft and friable that I was sure I had removed all of it. I had put on the record the probability of this man having a recurrence of the stone because of the fine fragments which might remain in some of the calices of the kidney. True enough, in a year he came back with the recommendation that the kidney should be removed if recurrence occurred. I removed the kidney, but as there was sepsis at the time of its removal the patient failed to improve, and finally died of a chronic sepsis a month and a half after the operation. I believe that the contour of the calices of the kidney in the cases of multiple calculus enables us to make a prediction of probable recurrence.

The case to which Dr. Eisendrath referred, which has been under my care, is that of a young girl who had a left renal colic first. After the stones had been demonstrated with the Roentgen ray, they were removed, although the right kidney showed stones that were causing no trouble. The patient remained well for nine months or a year, and then had right renal colic so severe that the stone from the right kidney was removed. After a year's lapse of time, the urine never clearing up completely, the patient came back with left renal colic, both kidneys showing stones in them, for which a third operation of emptying the kidney was done. She has some uneasiness in the right side, but otherwise is very comfortable.

DR. A. J. OCHSNER: There is no doubt in my mind that there is a sympathetic anuria, because I have made personal observation of that condition in several cases in which there was positive evidence. About twenty years ago Harrison of London demonstrated that calculi formed only in case the urine had a certain density, and this density cannot be reached if a patient takes a sufficient amount of distilled water. It is possible in these cases to prevent recurrence of calculi, provided that the patient is sufficiently impressed with the importance of taking distilled water. I have had the opportunity of demonstrating that in a large number of cases. One case which illustrates this was in a colleague of mine who could be freed from calculi provided he drank distilled water, but if he grew careless and failed to drink it, the calculi would return.

Another case I had that demonstrates the value of distilled water was in a patient who had renal colic constantly until about six years ago, when I ordered him to drink only distilled water. For six or seven years he never had an attack, until two years ago. During the summer he was building a house, and thought that it was too much trouble to drink distilled water; before the summer was over he had another attack. He lived in northern Wisconsin. He came to see me during the attack; I gave him 2 ounces of whisky and 1 ounce of distilled water several times and he improved. Since that time, he has had no attack, although formerly by drinking ordinary water he would have an attack every three or four months.

Tumors of Large Nerves Associated with Fibroma Molluscum, with Exhibition of Largest Specimen on Record

DR. NORMAN KERR: My case is of interest because of the large size of the tumor which was removed from the left sciatic nerve Jan. 29, 1912, at the Chicago Policlinic Hospital. The patient, a woman aged 22, about seven years ago was struck on the back of the lower third of the left thigh by some one's knee while at a dance. No attention was paid to this until about a week later, when a swelling was noticed which grew slowly until at present it appears to be the size of a cocoanut, is of solid consistence and is slightly movable in all directions when the posterior muscles of the thigh are relaxed, but fixed when they are held tense. There is no particular enlargement of the superficial veins, and no disturbance of nerve function, except during the last four days, during which she experienced a moderate amount of pain in the growth. Cutting down on the growth showed it to involve the sciatic nerve; it measured 6 inches in length by 3 in diameter, and weighed 1 pound and 3 ounces. The pathologist reported the tumor to be a fibroma. The time since the operation has been too short for evidences of regeneration to show themselves on account of the great length of nerve-trunk which was removed.

Book Notices

LEONARDO DA VINCI QUADERNI D'ANATOMIA II. Ventiquattro Fogli della Royal Library di Windsor. Cuore: Anatomia e Fisiologia. Publicati da Ove C. L. Vangensten, A. Fonahan, H. Hopstock. Vellum. Price, 3 pounds 8 shillings. Christiania: Jacob Dybwad, 1912.

The manuscripts of the anatomic papers and anatomic drawings of Leonardo da Vinci are preserved in the Royal Library at Windsor. Until recently this most remarkable work had not received adequate scholarly attention, but fortunately King George V. granted three Norwegian scientists permission to collate and photograph the original sheets at Windsor, and also to publish facsimile reproductions (collotype) together with German and English translations of the text. The result is a publication, in every sense monumental, the second volume of which is before us. The first volume was published in 1911 and contains twenty-two sheets dealing with a variety of anatomic and other subjects, the most important being the heart and its motions. The second volume contains thirty-three sheets in facsimile reproduction all dealing with

researches on the heart and its functions. It is the purpose to publish a third volume this year which will contain Leonardo's papers on the organs of generation, and then to follow with the remainder of the hitherto unpublished Windsor papers. The editions consist of 248 numbered copies; there will be no reprint. American libraries and bibliophiles should not neglect to secure this great work, which is of signal importance to medical history and to a full understanding of one of the most gifted and remarkable men that ever lived. The editors are peculiarly well qualified for their difficult task—Vangensten is a philologist, Fonahan a medical historian, and Hopstock an anatomist. Leonardo wrote from right to left probably because he was naturally left-handed, and the critical editing of the manuscript consequently is associated with unusual difficulties which have been mastered in a brilliant manner according to the opinions of competent scholars in different countries. The translations appear to be highly successful, and the heliotypes are beautiful. On many of the sheets the drawings take up but little space in comparison with the text, but even the smallest sketch is reproduced with the most minute exactness so that there surely is no loss of clearness in comparison with the original. From the technical point of view the publication reaches the top notch of the printer's art.

X-RAY DIAGNOSIS AND TREATMENT. A Text-Book for General Practitioners and Students. By W. J. S. Bythell, B.A., M.D., Hon. Physician to the Ancoats Hospital, Manchester, and A. E. Barclay, M.D., M.R., C.S., L.R.C.P., Medical Officer to the Electrical and X-Ray Departments Manchester Royal Infirmary. Oxford Medical Publications. Cloth. Price, $5.50. Pp. 147, with 118 illustrations. New York: Oxford University Press, 1912.

This book is based on a large experience in *x*-ray work in various institutions in Manchester. It is a record of personal work, and like all such statements from competent workers is interesting. As the authors intimate in their preface, the great difficulty with *x*-rays in medicine is that the work has as often as not been in the hands either of radiographers who knew no medicine or of physicians who knew precious little of *x*-rays. Bythell and Barclay are among the group—may their tribe increase—who know both, and they have furnished an excellent little book on diagnosis. The subject of *x*-ray examinations in its various anatomic localities has been excellently covered. At the end of each chapter there is a large collection of skiagrams with explanations illustrating the conditions which have just been considered in the text, and this is perhaps the best feature of the book. While the authors specifically disclaim any pretense of having offered an atlas, the illustrations are so many and so well chosen that the work amounts almost to an atlas of diagnostic radiography. Little is said about technic or apparatus, so that the book is more valuable for the mature *x*-ray worker than for the beginner. Only one chapter—14 of its 145 pages—is devoted to *x*-ray therapy, and this part of *x*-ray work is only sketched.

THE MILK QUESTION. By M. J. Rosenau, Professor of Preventive Medicine and Hygiene, Harvard Medical School. Cloth. Price, $2 net. Pp. 309, with illustrations. Boston: Houghton Mifflin Company, 1912.

This is a presentation of the N. W. Harris lectures for 1912, which were given by Prof. M. J. Rosenau, under the auspices of the Northwestern University. Why we have a milk question is fully explained in the first chapter. The author takes a sound attitude toward the exaggeration of the danger from milk, and his motto is "to enlighten, not to frighten." The presence of harmless as well as harmful bacteria is emphasized, since large numbers of harmless bacteria gain access to milk, so that numbers alone do not constitute danger. Special attention is given to pasteurization of milk, and although the author states that clean natural milk can never be replaced by treated milk, he admits that pasteurization has been forced on us and that clean, safe milk is at present problematic. In this connection he discusses the advantages and shortcomings of medical milk commissions and points out some disadvantages of the present system of inspecting dairies and recording the results on score cards. "Methods are much more important than equipment. Clean milk may be produced with clean methods and poor equipment, but good milk cannot be produced with good equipment and poor methods."

A strong plea is made for the eradication of tuberculosis among cattle. The value of the tuberculin test is emphasized. Of special interest is the eighth chapter, which gives the "experience" of milk from farm to consumer, and shows the points where contamination may take place. Nevertheless, certain statements seem rather radical. The value of the so-called germicidal action of fresh milk, which lasts but a few hours after milking, is probably of little practical value in reducing the bacterial content. This germicidal action prevents to some extent the multiplication of bacteria in the cistern. Also, it is disputed that normal milk has "few or no leukocytes." Some authorities hold that the charring of cooked milk is due to the proteins in milk rather than to the milk-sugar, as stated by the author. These are minor points, however. The keynote for the solution of the milk problem is well expressed in the sentence, "To keep milk clean we need inspection; to render milk safe we need pasteurization."

MEDIZINISCH-CHEMISCHES LABORATORIUMS-HILFSBUCH. Von Dr. Med. et Phil. Ludwig Pincussohn. Cloth. Price, 13.50 marks. Pp. 443, with 75 illustrations. Leipzig: F. C. W. Vogel, 1912.

This is an unusually useful book, containing, in addition to the material commonly found in laboratory guides, extensive tables of data which are likely to be useful to the laboratory worker. In laboratories where the exhaustive "Handbuch" of Abderhalden is not available, this small, compact work will be found of great use. There are, of course, in every laboratory special methods of technic devised and used with success, which will not be found described in this or any other book; but Pincussohn has made a good selection in most cases. We note with pleasure an occasional reference to the original description of a method, only to regret that such references are not more abundant. It often happens that, no matter how carefully the writer of a laboratory manual describes in abbreviated form a technical method, difficulty is found in making the method work. Then the worker needs to go to the more explicit descriptions available in the original articles for help out of his difficulties, and without any reference in his laboratory guide these are commonly difficult to locate. In our opinion the absence of satisfactory references is a serious deficiency in most laboratory guides, and the small amount of space required for these could easily be spared.

DIE PUERPERALE WUNDINFEKTION. By Dr. Albert Hamm, Oberarzt an der Universitäts-Frauenklinik in Strassburg i. E. Paper. Price, 6 marks. Pp. 167. Berlin: Julius Springer, 1912

In this monograph the author takes up the subject of puerperal infection seriatim and places under one cover a complete summary of our present knowledge regarding it. After several pages devoted to historical considerations, the significance of puerperal infection as a wound infection is taken up. Exogenous, endogenous and metastatic infection is included here as well as methods of bacteriologic examination for both aerobic and anaerobic organisms. The problem of bacterial virulence and of resistance to infection is intimately discussed. The pathologic conditions arising from the various forms of infection are briefly classified. A consideration of treatment in its different phases completes the work.

DISEASES OF CHILDREN. A Practical Treatise on Diagnosis and Treatment, for the Use of Students and Practitioners of Medicine. By Benjamin Knox Rachford, Professor of Diseases of Children, Ohio-Miami Medical College, Department of Medicine of the University of Cincinnati. Cloth. Price, $6. Pp. 783, with 107 illustrations. New York: D. Appleton & Co., 1912.

This book is a practical one, laying special stress on diagnosis and treatment and less on pathology and etiology. This makes it rather more useful to the practitioner, perhaps, than to the student. While the book is the expression of a ripe experience, there are certain chapters that are especially elaborated because the author is particularly interested in that subject. Thus the chapter on "Pseudomasturbation" covers six pages and is admirable. The book will be useful to the practitioner who wants a small, inexpensive, but reliable book on diseases of children.

A TREATISE ON PELLAGRA. For the General Practitioner. By Edward Jenner Wood, S.B., M.D., Chairman of the Pellagra Commission, North Carolina Board of Health. Cloth. Price, $4. Pp.

Dr. Wood offers as the justification for this book the fact that when it was begun, five years ago, there was no adequate treatise in English on the subject. Although this lack of literature on pellagra in English has been supplied in the great amount of literature on the subject which the last five years have given us, the book still justifies its existence, for it is a most useful summary of the knowledge of the subject. The author writes from first-hand knowledge of pellagra and evidently after long and thoughtful interest in the subject, so that the personal element is not lacking—indeed it is agreeably present in a frank honesty, a lack of prejudice and hobbies, and a practical wisdom; but the chief value of the work lies in the comprehensive presentation of the facts of pellagra which it offers. The subject is divided into the history, etiology, general characteristics, skin manifestations, digestive disturbances, nervous and mental symptoms, diagnosis, prognosis, prophylaxis and treatment, and under these various headings the author has included practically a complete summary of our knowledge of this baffling disease. The chapter on etiology is naturally the most interesting. The author is a disbeliever in the maize theory and inclines to Sambon's simulium theory of its transmission. The style is easy and interesting. Altogether, it is a valuable book.

GESAMMELTE WERKE VON K. G. LENNANDER. Im Auftrage der Universität zu Upsala. Unter Mitwirkung von Dr. K. H. Glertz, Prof. Dr. K. Petren, Dr. A. Petterson, Doz. Dr. Fr. Zachrisson und Prof. Dr. H. I. Ohrvall. Herausgegeben von Dr. Gustaf Ekehorn, Professor der Chirurgie an der Universität Upsala. Paper. Parts 1, 2 and 3. Pp. 1233, with illustrations. Price, 30 marks. Upsala and Stockholm: Almqvist & Wiksells Boktryckeri, 1912.

Lennander was professor of surgery in the University of Upsala from 1892 until his death in 1911 at the age of 51. The republication of his collected works by the university indicates the high value placed on his work by those among whom it was carried on. Lennander had many friends among American surgeons, and it is on this account and according to his personal wish that the articles originally published in Swedish have been translated into English. The articles published in German and in French are reprinted without change. This makes the writings of Lennander easy of access and this is desirable because he made contributions of permanent value to the literature of surgery.

THE HOSPITAL CORPS QUIZ COMPEND. A Manual for the Hospital Corps, U. S. Army Hospital Corps, National Guard Red Cross Association and for Students and Practitioners. By Frank C. Griffis, M.D., Medical Reserve Corps, U. S. Army. Cloth. Price, $0.75. Pp. 218. Columbus, Ohio: Edward T. Miller Company, 1912.

Dr. Griffis, in this little manual, has given us in condensed form and yet in sufficient detail, an outline of what is required of a soldier in the Hospital Corps of the Army when he is called on for active service. The book will be of value to the Hospital Corps of the National Guard and the Red Cross organizations. A section is allotted to each of the following subjects: the hospital corps in the post and field, elementary anatomy and physiology; first aid; nursing; mess management and cooking; materia medica, therapeutics and pharmacy; hygiene of the post and camp, and minor surgery. A full and complete index adds greatly to the value of the book.

THE PREVENTION AND TREATMENT OF DISEASES IN THE TROPICS. A Handbook for Officials and Travelers Compiled Chiefly for the Use of Officials in the Soudan. By Edward S. Crispin, M.R.C.S., L.R.C.P., Assistant Director of the Soudan Medical Department. Cloth. Price, $0.50 net. Pp. 89. Philadelphia: J. B. Lippincott Company, 1912.

This little book takes up first preventive treatment by the destruction of disease-carrying insects and protection from their attack, and then personal hygiene, discussing clothing, drink, food, etc. The second part deals with treatment and, incidentally, with rapid diagnosis. The diagnostic value of pain in different parts of the body is briefly mentioned and the treatment outlined. One chapter is devoted to the consideration of the treatment of injury or disease characterized by symptoms other than pain.

Medicolegal

Medical Practice Act and What Constitutes a Violation Thereof

(People vs. Dunn (Ill.), 99 N. E. R. 577)

The Supreme Court of Illinois affirms a judgment for the plaintiff in this action to recover, for the use of the State Board of Health, the penalty provided by sections 9 and 10 of the medical practice act of 1899 for a second violation of section 7 of that act. The action was begun by the filing of a praecipe and statement of claim, in which it was alleged that the defendant practiced medicine, as defined in section 7, by treating and professing to treat, and prescribing certain material remedies for, the physical ailments of another without a license so to do, as provided by sections 2 and 3 of the medical practice act, and alleged, further, that the offense was committed in the city of Chicago on or about Oct. 16, 1910, and Jan. 26, 1911, and that the defendant had been previously convicted of the same offense. There was a verdict of guilty on which a judgment was entered for $200 and costs, the defendant being ordered committed to the county jail, until the debt and costs were paid, for a period of not to exceed ninety days.

It was contended that the act is a violation of the constitutional provision which prohibits the general assembly, by local or special law, from "granting to any corporation, association or individual any special or exclusive privilege, immunity or franchise whatever." But the court deems it a sufficient answer to this contention to say that the State Board of Health, as created by the statute, is a branch of the executive department of the state government, and its members are officers of the state. That board, therefore, is not a corporation, association, or an individual, as those terms are used in the section of the constitution relied on. The right given the board by the medical practice act to sue for and recover the penalties therein imposed does not constitute the granting of any special or exclusive privilege, immunity, or franchise to that board or its members.

As to the contention that the act is a special law which violates the provision of the state constitution that where a general law can be made applicable no special law shall be enacted, the court says that the act, if it be special, does not fall within any of the cases enumerated in section 22 of article 4 of the constitution in which local or special laws are prohibited. This court has repeatedly held that the general clause at the end of the section, that "where a general law can be made applicable no special law shall be enacted," addresses itself to the general assembly alone, and when that body has concluded a special law is necessary, except in the cases already prohibited, its conclusion is not subject to judicial review.

It was next urged that there was error in denying the defendant's motion for a more specific statement of claim, the defendant contending that thereby she had been deprived of the opportunity to make a proper defense, her theory being that she should have been furnished with the names of the parties she was alleged to have treated. But whether a more specific statement of claim will be required is discretionary with the court, and in this case the discretion was not abused. The statement gave the dates on which it was alleged the offense had been committed, and it was not necessary to give the name of the person alleged to have been treated, or to state that the name of such person was unknown.

Again, the defendant contended that as this is a penal statute, it must be strictly construed, and that there was no violation of the law shown. Two witnesses, a Mrs. Seivert and another woman, testified that they were inspectors of the State Board of Health, and that they went together to the defendant's home on Jan. 26, 1911, when Mrs. Seivert asked the defendant if she could cure cancer, and she said that she could, asking Mrs. Seivert if she had one. Mrs. Seivert's reply was that she did not think so, but had a scar on her neck and had been sick for some time. The defendant then got a magnifying glass, requested Mrs. Seivert to open the collar of her dress, made an examination of the scar, and informed her that it was not a cancer, but a tumor, which she would cure if Mrs.

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Seivert would follow her treatment. Asked what her charge was, she said, $2, which was paid. She then told Mrs. Seivert that she would have to pay her $50 more in two weeks, and the balance of $50 in four weeks. When the women were about to depart, the defendant told Mrs. Seivert that, if she did not come back at the time appointed for the treatment, she wanted her to telephone her. Neither of the witnesses saw the defendant again, and no further treatment was given or solicited.

While, strictly speaking, no treatment had been administered to Mrs. Seivert on the occasion of her visit, her ailment was diagnosed by the defendant and every assurance given that she was prepared to treat her, and would give the treatment, and a time was fixed when the first treatment should be administered. A fee was charged and paid for the diagnosis and consultation. The court thinks it clear that the defendant did by this act profess to treat the physical ailment of another, and that the verdict of the jury of guilty was proper.

Lastly, the defendant insisted that the statute was not violated for the reason that Mrs. Seivert was suffering from no ailment whatever, and merely pretended that she had an ailment, but there was nothing in the record which justified this contention, even conceding that it would be a sufficient defense. For anything that appeared in the record the diagnosis of the defendant may have been correct.

Sufficiency of Evidence and Right of Recovery for Attendance on Minor Son Away from Home

(Des Moud vs. Kelly (Mo.), 146 S. W. R. 99)

The Kansas City Court of Appeals affirms a judgment for medical services rendered in attending a minor son of the defendant, while he was sick at his grandfather's home. The court says that the physician died a short time after the suit was begun, and the cause was revived in the name of his administratrix. The evidence was somewhat indefinite as to the number of visits the physician made, but it was shown that the boy was sick about six weeks, that the physician visited him as often, on some days, as two or three times, and, as the boy was afflicted with a severe case of typhoid fever, it was reasonable to suppose that he visited him almost daily at least, as such cases demand frequent visits and the most careful and constant watchfulness of a physician. The boy's sickness was so severe that he required the services of a trained nurse for the whole time mentioned, and that it was thought necessary for her to go with him to the home of the defendant, in company with the physician, at which time he was still very sick. The defendant, also, was one of the party attending the invalid at that time. It was shown that $1.50 for a day visit, and $2.50 for a night visit of a physician to a patient was a reasonable charge, and that $20 was a reasonable charge for the services of the physician in going with the son to his home. January 5, the defendant wrote the physician to the effect that he did not know how many visits he had made to the son; that he wanted him to give the days and dates of such visits, stating that he had paid him $20 the day the physician had brought the son home. In another letter to the physician, dated September 15, the defendant stated that he had paid him $10, and would try and send him a little more every pay-day. It was also shown that the defendant was present at one time while the physician was treating his son, and that he expressed his satisfaction with the arrangement. These letters went to show that the defendant recognized his indebtedness to the physician in excess of the twenty days' services rendered, and that he would continue to pay on each of his pay-days until the whole was discharged.

In view of all the evidence and the reasonable inference to be drawn therefrom, it was sufficient to support the judgment for the plaintiff. In view of the common knowledge that in severe cases of typhoid fever physicians visit their patients almost daily, and sometimes several times each day and often at night, and the other facts and circumstances in evidence, the court thinks the verdict of the jury for $116.30 was not excessive.

The defendant objected to the introduction of any evidence, because the petition did not state a cause of action, in that it failed to state that the doctor was a regularly licensed physician. The objection was not well taken. It is not necessary for the court to discuss the question whether an unlicensed doctor can enforce payment for his services as such; for it was not made an issue in the case. Until that matter was made an issue, the presumption would be that the physician was a regularly licensed practicing physician. It is a rule of law that, nothing being shown to the contrary, men do obey the law. If it was true that the physician was not licensed as such, the defendant should have raised the question by answer, in order to have availed himself of that fact as a defense to the action.

It was further insisted that the plaintiff failed to prove the allegations in his petition that the services were rendered at the instance and request of the defendant, and that they were necessary. The form of the pleading was of no consequence. Yet the court thinks the evidence tended to support the allegations of the petition. The defendant knew the physician was attending the son and rendering the necessary services. This was sufficient to raise the presumption that such services were rendered at his request. But it was not required that any such request should be made, in order to render the defendant liable for their reasonable value, if they were such as come within the meaning of the term "necessaries." It was argued that the defendant was not liable, unless it was shown that he failed to furnish such services, but it was clear that he failed to furnish them, and, besides, he approved of them, and nothing could make it more binding. Proof of the necessity for the services, the approval of them while they were being rendered, and a promise to pay afterward, the court thinks sufficiently supported the allegations of the petition.

Validity of Indictment and of Medical Practice Act

(State vs. Tucker (Miss.), 59 So. R. 826)

The Supreme Court of Mississippi holds that the trial judge erred in sustaining a demurrer to the indictment in this case, which was under Section 1334 of the code of 1906, prohibiting the practice of professions without license, and prescribing a penalty therefor. The court says that the defendant was indicted for practicing as a physician without a license as required by law. It was claimed that the indictment was not sufficient, because it failed to contain the following words of the statute: "Without having first been examined and obtained a license as required by law." The indictment charged that he "did unlawfully practice as a physician . . . and did not then and there have a license so to do." That was a sufficient statement of the offense for the trial of the party charged. A license would not be issued to a person without the examination required by law. It would be a sufficient defense for a person charged to show that he had a license.

The other point raised in the demurrer to the indictment was that Section 1334 and 3691 of the code and the scheme proposed by said sections are prohibited by the fourteenth amendment to the constitution of the United States, which provides that no state shall make or enforce any law which shall abridge the privileges or immunities of the citizens of the United States, nor deprive any person of life, liberty or property without due process of law, nor deny to any person within the jurisdiction the equal protection of the law. But the laws of this state regulating the practice of medicine, prescribing how license for engaging in that profession may be obtained, defining what is the practice of medicine, and providing penalties therefor, are within the police powers which may be lawfully exercised by this state. Certainly the state has a right to make proper and reasonable regulations for certain pursuits and professions. The purpose of the law is to protect the public, and to require all persons who may offer to engage in the practice of medicine to prepare themselves properly for such work, and to answer to the state by examinations as to whether such preparation has been sufficient. The regulations as contained in the laws of this state are certainly not unreasonable; and, as shown by the very wording of the statute, every person is given an opportunity to comply with them and enter into the practice of medicine.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Pediatrics, New York

February, XXX, No. 2, pp. 81-160

1 *Treatment of Meningitis by Drainage of Cisterna Magna. I. S. Haynes, New York.
2 One Hundred Infants Followed from Birth to End of First Year. C. Herrman, New York.
3 Orthodontia. F. R. Stathers, Philadelphia.
4 *Effects of Heated and Superheated Milk on Infant's Nutrition. H. L. Coit, Newark, N. J.
5 *Rachiocentesis, an Aid to Diagnosis. Its Value in Relieving Convulsions. L. Fischer, New York.
6 Unusual Complications of Infectious Diseases in Childhood, with Report of Cases. A. Stern, Elizabeth, N. J.
7 *Use of Antistreptococcus Serum Locally in Treatment of Vaccinal Ulcers. L. A. Sexton, New York.

1. **Treatment of Meningitis by Drainage.**—Haynes believes that all the evidence points to the cisterna magna as the one logical place where removal of pyogenic cerebrospinal fluid should be practiced. He has performed the operation eight times, but unfortunately all his patients died. This, he says, is no discredit to the operation. These results simply mean that operative relief must be offered at the beginning of the disease. Delay brings disaster. If a patient presents head symptoms, a rising blood-pressure, venous engorgement and edema of the optic papilla, with the absence of the copper-reducing elements from the cerebrospinal fluid, the diagnosis is absolutely sure. The disease is septic meningitis. The end is certain, unless relief be afforded by instant, free and continuous escape from the skull of the excess of cerebrospinal fluid with its content of deadly bacteria and poisons.

4. **Effects of Heated and Superheated Milk.**—After careful and thorough investigation Coit found that there is apparently no serious loss of nutritive value produced by feeding an animal on boiled milk derived from an animal of the same species. At the same time it must be pointed out that the published evidence on this point is scanty. When an animal is fed on the milk of another species, the milk from which has been found to be suitable for this purpose, such small differences as have been found in the nutritive values of raw and boiled milk have been in favor of boiled milk. The milk of the same species has a considerably higher nutritive value for that species than the milk of any other species so far investigated. The evidence dealt with throughout Coit's report emphasizes very forcibly the importance of breast-feeding for the young of all species, and shows the special importance of breast-feeding during the early weeks of life. When artificial feeding has been employed in animal experiments, boiled milk of a foreign species has given more satisfactory results than similar milk raw. The Berlin figures dealing with infants fed on boiled cow's milk, give extremely favorable results, and in view of the evidence collected in this report could scarcely be expected to be surpassed had raw cow's milk been used. It is pointed out that the Berlin babies who are artificially fed in connection with the consultation receive milk of a known excellent quality.

5. **Rachiocentesis an Aid to Diagnosis.**—The frequency of convulsions in children prompts Fischer to call attention to the necessity of rachiocentesis as an aid to an early diagnosis of this very important symptom. Intestinal intoxication is a frequent cause of cerebral congestion, resulting in convulsions. But more commonly convulsions are the initial symptoms of an infectious disease, a forerunner of pneumonia, occasionally an early manifestation of scarlet fever, measles or diphtheria. One must not overlook the frequency of convulsions in the beginning of a cerebrospinal meningitis, a tuberculous meningitis, or some malignant form of cerebral manifestation. The diagnosis must be made early so that treatment can be instituted early.

Convulsions recur. Because of their recurrence we can try to control their frequency or prevent their return. This can be accomplished by reducing intracranial pressure. For this purpose rachiocentesis is indicated. Next in importance to relieve the intracranial pressure by lumbar puncture is an injection of a pint of soap-water to empty the rectum. If the child can swallow, give 2 grains of calomel, followed by teaspoonful doses of rhubarb-soda, in all about six doses. This eliminative treatment should be given before any nutrition is ordered. Large quantities of water may be given. An ice-bag should be ordered to be applied over the anterior fontanel. It is important not to move a child too much during a convulsion, for handling the limbs will frequently provoke a spasm.

7. **Antistreptococcus Serum in Vaccinal Ulcers.**—From the first use of antistreptococcus serum three and a half years ago, Sexton noted a marked improvement in the indolent, punched-out vaccinal ulcers, and he has yet to see one that has not responded readily to the constant application of antistreptococcus serum used locally in the form of a wet dressing. The wound is filled with the serum, this is covered with a small wet dressing of same, and over this is placed an oiled silk dressing in order to maintain the moisture as long as possible. The dressings when dry become very hard and stiff. In order to obviate the unpleasantness caused by this the oiled silk is removed and the dressing remoistened, without disturbing it, three or four times daily. The rapidity with which these indolent ulcers respond to this form of treatment is said to be remarkable. Sexton has tried various other serums, including normal horse-serum, but the results have been unsatisfactory.

Boston Medical and Surgical Journal

March 6, CLXVIII, No. 10, pp. 333-372

8 Collection of Facts, Ideas and Theories Relating to Diverse Elements that Contribute to Success in Treatment of Joint Diseases. Relationships Between Visceral Ptosis and Arthritis. Comparisons Between Mild Intestinal Toxemias and Gout. H. W. Marshall, Boston.
9 Diverticulitis. J. Stanton, Boston.
10 Case of Infection with Hymenolepis (Taenia) Nana, the Dwarf Tapeworm. I. Gerber, Boston.
11 *Pathology of Typhoid Spine. M. H. Rogers, Boston.
12 Autotherapy (Sputum Filtrate) in Acute Articular Rheumatism: Report of Case. C. H. Duncan, New York.

11. **Pathology of Typhoid Spine.**—In studying reported cases, Rogers says, it is clear that there is a very definite clinical story so that there should be one pathologic process as the basis. Following an attack of typhoid, during the convalescence or within six months' time, there is a sharp, rather sudden onset of pain in the back, usually brought on by some slight injury, or sudden motion. The pain is described as much more severe than is usual in any case of tuberculosis of the spine, and is made worse on the slightest motion. There is usually tenderness to pressure over the portion of the spine corresponding to the pain, and all motions are very much limited. There is often a few degrees of temperature elevation at the beginning; there is never any distinct kyphos. The knee-jerks have been reported as increased, but there is no other sign of paralysis, there being often a decided disinclination to use the legs on account of the pain. This condition lasts from several weeks to from two to three months, and there may be either a complete recovery or there may be some limitation of motion of the spine, and occasionally some deformity showing definite bone changes.

The pathologic process of other bone lesions due to the typhoid bacillus is well known, and those occurring in the tibia may be taken as a description. The simplest process is a localized bone abscess, sometimes three or four in the same bone, in the cortex just beneath the periosteum. These show in the radiogram as a rounded loss of substance, casting a shadow of different density than normal bone. They are generally small, about the diameter of a lead pencil. The typhoid bacillus has been recovered from such conditions, showing that they are true infections and not simply bone cysts. The periosteum may become involved and the process may spread so that the radiogram will show more extensive involvement of the cortex. Evidently the typhoid organism is not virulent enough in the bone to cause a constantly increasing osteomyelitis, such as the cocci group, but tends to remain localized, and to die out. Taking into consideration the sudden onset of these lesions, the fact that they may be multiple and yet localized and circumscribed, there is a strong suggestion that they are the

result of septic emboli. The so-called "typhoid spine" is an osteomyelitis of the vertebral bodies, which cause lesions similar to the typhoidal bone abscesses of other bones, located in the cortex just beneath the periosteum.

Cleveland Medical Journal

February, XII, No. 2, pp. 89-160

13 Traumatic Neurosis: Retrospect and Forecast. P. Bailey, New York.
14 Epigastric Hernia. Its Importance in Diagnosis of Obscure Abdominal Conditions. J. Phillips, Cleveland.
15 Sloughing of Nasal Septum after Submucous Resection. D. A. Prendergast, Cleveland.
16 *Factors Concerned in Spread of Scarlet Fever. S. C. Lind, Cleveland.
17 Suturing Nasal Septum after Submucous Resection Instead of Packing. W. J. Abbott, Cleveland.
18 *Station of Presenting Part in Labor. A. J. Skeel, Cleveland.
19 Case of (Hysterical?) Sudden Monocular Real Blindness with Recovery. W. C. Tuckerman, Cleveland.
20 *Case of Fatal Poisoning by Tobacco. E. C. Garvin, Cleveland.

16. **Scarlet Fever.**—Lind does not make any new points but his emphasis of well known ones is summarized as follows: 1. Scarlet fever is due to an unknown virus transferable to monkeys and from monkey to monkey. 2. The virus is found in the throat and nose. 3. Desquamation *per se* is seldom the cause of the spreading infection. 4. Proof is lacking that scarlet fever may be carried through the air. 5. The unrecognized cases are the most potent in its spread. 6. Prophylaxis is difficult and strict isolation is the best means of checking an epidemic.

18. **Station in Labor.**—Skeel urges that the exact station, as well as the presentation and position, should always be carefully considered before deciding the treatment in delayed labor.

20. **Fatal Poisoning by Tobacco.**—In a case cited by Garvin death followed the rectal injection of one pint of water in which was dissolved one and one-half teaspoonfuls of smoking tobacco given for pin-worms. The child, aged 6½ years, immediately complained of faintness, inability to stand and great nausea, and soon commenced to vomit very severely. The bowels also acted at this time and a part at least of the injection was expelled. These symptoms continued for about fifteen minutes, when convulsions ensued, lasting about twenty minutes. The child then became quiet and died in collapse about forty-five minutes after administration of the injection.

Delaware State Medical Journal, Wilmington

February, IV, No. 2, pp. 1-26

21 Technic and Results of Intravenous Injection of Salvarsan. B. A. Jenkin, Wilmington.

Journal of Experimental Medicine, New York

March, XVII, No. 3, pp. 249-372

22 *Cultures from Sputum and Blood in Lobar Pneumonia. T. W. Hastings and E. Boehm, New York.
23 *Pancreatic Transplantations in Spleen. J. H. Pratt and F. T. Murphy, Boston.
24 *Permanent Life of Connective Tissue Outside Organism. A. H. Ebeling, New York.
25 *Intestine Obstruction. I. Toxic Substance Produced in Closed Duodenal Loops. G. H. Whipple, H. B. Stone and B. M. Bernheim, Baltimore.
26 *Idem. II. Toxic Substance Produced by Mucosa of Closed Duodenal Loops. G. H. Whipple, H. B. Stone and B. M. Bernheim, Baltimore.
27 *Extracellular Relation of Malarial Parasite to Red Corpuscle, and Its Method of Securing Attachment to External Surface of Red Corpuscle. M. Rowley-Lawson, New London.
28 *Influence of Lecithin and Cholesterin on Growth of Tumors. T. B. Robertson and T. C. Burnett, Berkeley, Cal.
29 *Pneumonic Lesions Made by Intrabronchial Insufflation of Non-Virulent Pneumococci. M. Wollstein and S. J. Meltzer, New York.
30 *Experimental Study of Bone and Joint Tuberculosis. J. Fraser, Edinburgh

22. **Cultures in Lobar Pneumonia.**—In thirty-two unselected cases studied by Hastings and Boehm cultures were taken from both the blood and the sputum, and in five of these more than one blood culture was taken. In one case the culture was taken from the blood only, and in this instance the pneumococcus was found. The result in the thirty-two cases in which cultures were made both from the blood and the sputum are as follows: 1. In eleven cases the blood and sputum cultures were positive. (a) In nine cases the pneumococcus was isolated, and five of these patients died. (b) In two cases, instead of the pneumococcus, *Streptococcus hemolysans (longus)* was found. One of these patients died. 2. In twenty-one cases the blood cultures were negative, and in eighteen of these the sputum cultures were positive and in three negative. In these three the only result recorded was the absence of pneumococcus. (a) In nine cases the pneumococcus was isolated. Two of these patients died. (b) In twelve cases no pneumococcus was found. Two of these patients died.

Of the patients in which no pneumococcus was found, in two cases *Bacillus coli* was isolated; in one case *Micrococcus catarrhalis;* in one case a staphylococcus (type not stated); in two cases staphylococcus and streptococcus; in one case *Bacillus influenzae;* in one case *Bacillus fluorescens non-liquefacicus;* in one case an unidentified Gram-positive chromogenic organism, probably saprophytic; and in three cases there are no recorded results except that the pneumococcus was absent. In the total of thirty-three blood cultures, the pneumococcus was found in ten cases (30.3 per cent.); six of the patients died.

During the years 1910 to 1912 sputum cultures were taken from forty-four cases of pneumonia, of which twenty-four showed pneumococci (54 per cent.), and twenty showed no pneumococci (45 per cent.). The authors conclude that typical cases of lobar pneumonia, in which no pneumococci are to be found either in blood or sputum, probably exist more frequently than is generally supposed. These cases are not to be distinguished from the pneumococcus group, except by blood and sputum cultures. *Streptococcus hemolysans (longus)* is an organism which may give rise to such a case. In this connection it is of interest to note that Schottmüller isolated *Streptococcus mucosus capsulatus* from the blood in a case of croupous pneumonia. There is probably no prognostic value in the bacteriologic findings in lobar pneumonia, but from a series of thirty-two cases the authors believe no definite opinion can be drawn.

23. **Pancreatic Transplantations in Spleen.**—Pancreatic transplants to the spleen made by Pratt and Murphy underwent rapid autolysis. In five of the nine animals examined 18 hours to 218 days after the transplantation, no pancreatic tissue was demonstrable. In one dog well preserved acini were found thirteen days after the transplantation. In the other three experiments in which pancreatic cells were present in the spleen, the interval between the operation and the death of the animal varied from eighteen hours to eight days. One dog lived for 187 days with the internal function of the pancreas maintained by a graft in the spleen entirely separated from its original vascular supply and nervous connections. The interval between the date of the transplantation and the death of the animal was 209 days. Although the tolerance for carbohydrates sank to a low point, persistent glycosuria did not develop. Inanition due to the absence of pancreatic secretion from the intestine was the cause of death. The feeding of fresh pancreas supplied this lack in part and apparently prevented the death of the animal in the third week following pancreatectomy. The limit of tolerance to glucose rose for a short time after the feeding of pancreas was begun, but was at a fairly constant low level from May 24 to August 20.

The pancreatic remains at death as determined by serial sections were less than 1 centimeter in size. The larger part of this small nodule was composed of fibrous tissue. Acini were found, and some of the cells contained well preserved granules staining blue with phosphotungstic hematoxylin and identical in appearance with the zymogen granules of the normal pancreas. As these granules do not occur in the cells of the islands of Langerhans, their presence furnishes additional evidence that the pancreatic cells in which they occurred in the graft were acinar cells. No islands of Langerhans were found in any of the sections. If Ribbert's statement is true that only cells that can functionate will live when transplanted, then the presence of normal appearing acinar epithelium in this graft 209 days after the pancreatic tissue was transplanted into the spleen is evidence that the acinar cells can carry on the internal function of the pancreas. This experiment does not disprove the neurogenic theory of diabetes, but it presents additional evidence against it, and in favor of the theory of an internal secretion.

The prevention of diabetes for more than six months by means of the small nodule of sclerosed pancreatic tissue in the spleen, the authors point out, makes the accuracy of Martina's observations improbable. If his graft in the spleen remained active, why did sugar appear in the urine two days after the remainder of the pancreas was removed and persist in large amount, 3 to 6 per cent., until the death of the animal? Inasmuch as the animal lived four months with this degree of glycosuria it is probable that some pancreatic juice was entering the intestine, secreted from remains of pancreatic tissue so small that they were overlooked at the autopsy. Among the dogs in which the authors shut out all the pancreatic secretion from the intestine, marked disturbance of absorption attended with great loss of weight, always occurred.

24. **Life of Connective Tissue Outside of Organism.**—It is stated by Ebeling that connective tissue can be kept in a condition of active growth outside of the organism for more than eleven months, that its mass increases considerably, and its power of proliferation, after such a long period, is more active than at the beginning of its life *in vitro*.

25. **Intestinal Obstruction.**—The authors report on their study of a toxic substance produced in closed duodenal loops, made in dogs by ligatures placed just below the pancreatic duct and just beyond the duodenojejunal junction, together with a posterior gastro-enterostomy. These closed duodenal loop dogs died with symptoms like those of patients suffering from volvulus or high intestinal obstruction. This duodenal loop may simulate closely a volvulus in which there has been no vascular disturbance. Dogs with closed duodenal loops which had been washed out carefully survived a little longer on the average than animals with unwashed loops. The duration of life in the first instance was one to three days, with an average of about forty-eight hours. The dogs usually lost considerable fluid by vomiting and diarrhea. A weak pulse, low blood-pressure and temperature were usually conspicuous in the last stages.

Necropsy showed more or less splanchnic congestion which may be most marked in the mucosa of the upper small intestine. The peritoneum was usually clear and the closed loop was either distended with thin fluid, or collapsed, and contained only a small amount of pasty brown material. The mucosa of the loop showed ulceration and even perforation, but in the majority of cases it was intact and exhibited only a moderate congestion. The authors found that a simple intestinal obstruction added to a closed duodenal loop does not modify the result in any manner, but it may hasten the fatal outcome.

The liver plays no essential rôle as a protective agent against this poison, for a dog with an Eck fistula may live three days with a closed loop. A normal dog reacts to intraportal injection and to intravenous injection of the toxic substance in an identical manner. Drainage of this loop under certain conditions may not interfere with the general health over a period of weeks or months. Excision of the part of the duodenum included in this loop causes no disturbance.

The material from the closed duodenal loops contain no bile, pancreatic juice, gastric juice, or split products from the food. It can be formed in no other way than by the activity of the intestinal mucosa and the growth of the intestinal bacteria. This material after dilution, autolysis, sterilization and filtration produces a characteristic effect when introduced intravenously. When given in toxic doses it causes a profound drop in blood-pressure, general collapse, drop in temperature, salivation, vomiting and profuse diarrhea, which is often blood-stained. Splanchnic congestion is the conspicuous feature at autopsy and shows especially in the villi of the duodenal and jejunal mucosæ. Epinephrin, during this period of low blood-pressure and splanchnic congestion, will cause the usual reaction when given intravenously, but applied locally or given intravenously, the engorged intestinal mucosa is not bleached.

Secretion is not found in the duodenal loop fluid, and the loop material does not influence the pancreatic secretion. Intraportal injection of the toxic material gives a reaction similar to intravenous injection. Intraperitoneal and subcutaneous injections produce a relatively slow reaction which closely resembles the picture seen in the closed duodenal loop dog. In both cases there is a relatively slow absorption, but the splanchnic congestion and other findings, though less intense, are present in both groups. The authors are forced to conclude, therefore, that there seems to be no escape from the conclusion that a poisonous substance is formed in this closed duodenal loop which is absorbed from it and causes intoxication and death. Injection of this toxic substance into a normal dog gives intoxication and a reaction more intense but similar to that developing in a closed-loop dog.

26. **Idem.**—In this paper the authors report a series of experiments showing that a toxic substance is produced by the intestinal mucosa during intestinal obstruction and can be demonstrated in it, and that the poison will not be formed in closed duodenal loops when the mucosa has been destroyed by chemical means. Moreover, no such poison can be demonstrated in the normal intestinal mucosa. The blood taken from a dog with a duodenal loop is not toxic to a normal dog when given intravenously. This toxic substance is absorbed from the mucosa itself and not from the lumen of the drained loops. The same is probably true of the closed loops which have an intact mucosa. It seems highly probable that the poison is formed by the mucosa and is in great part absorbed directly from it by the blood. Normal intestinal mucosa contains no toxic substance nor can it neutralize *in vitro* the toxic substance produced in the closed loops. There is no evidence that the toxic material when given intravenously is excreted by the intestine or held by the intestinal mucosa in any demonstrable form. The toxic substance is not absorbed from the normal intestinal tract. Destruction of the mucosa in a closed loop by means of sodium fluorid prevents the formation of the toxic substance. This fact furnishes the final proof that the mucosa is the essential factor in the elaboration of the poisonous material.

27. **Relation of Malarial Parasite to Red Corpuscles.**—Briefly, the author emphasizes that the malarial parasite is extracellular during its entire developmental cycle; that is, with the exception of the brief periods when it is free in the blood-serum, it is attached to the outside surface of the red corpuscle. The parasite secures its attachment to the outside of the red corpuscle by means of filamentous pseudopodia thrown out by the parasite for that purpose. The attaching processes are described as (1) primary and (2) secondary (accessory) attaching pseudopodia. She has not been able to find any evidence of conjugation of malarial parasites in any stage of development, and she suggests that it may be that Craig's "conjugating parasites" are the result of a wrong interpretation of the infection of a corpuscular mound by two young parasites and that the idea that the parasites were intracellular perhaps led to the misconception.

28. **Lecithin and Cholesterin and Growth of Tumors.**—The authors found that cholesterin, whether suspended in dilute alcohol or in sodium oleate solution, when injected directly into tumors causes a marked acceleration both of the primary and of the metastatic growth. The acceleration of the growth of the primary tumor by cholesterin is most evident in the premetastatic stage. Lecithin, when injected in the form of an aqueous emulsion directly into tumors, diminishes the tendency to form metastases, retards the metastatic growth when it does occur, and in some instances also retards the primary growth. The retardation due to lecithin is most evident in the metastatic stage. Simultaneous injection of minims 6 strontium chlorid solution into the tumors does not appreciably affect the action of the lecithin.

29. **Pneumonic Lesions Made by Non-Virulent Pneumococci.**—Twenty to twenty-four hour broth cultures of the avirulent pneumococcus were injected by intrabronchial insufflation into eighteen dogs, in doses varying from 10 to 30 c.c. In three instances the dose of cocci was enriched three times; that is, it contained three times the number of organisms, as the result of centrifugalization of a large quantity of culture. None of the dogs died as the result of the inoculation of these doses of avirulent pneumococci. All were killed at periods varying from one to seven days after the dose had been administered. The animals did not appear to be very ill, and only three showed a rise of temperature to 41.1 C., all three having received a dose

of 10 c.c. The animals receiving the enriched doses, as well as one dog to whom 30 c.c. were given, had even less fever and no more severe local reaction than the dogs to whom the smaller dose had been administered.

The intrabronchial insufflation of a non-virulent pneumococcus caused, like the insufflation of a virulent pneumococcus, the development of an exudate in the lungs which, in general, leaves the framework unaffected, and the lesion presents the gross appearance of a lobar pneumonia. It differs, however, materially from the pneumonia produced by virulent pneumococci in the important points that the consolidation tends to a more rapid resolution, the disease is non-fatal, the blood is not invaded by the organism, and the exudate is strikingly poor in fibrin. As to the question which was the starting point for the foregoing investigation, namely, whether the pneumonic lesion produced by the streptococcus is merely a form of pneumonia caused by a less virulent organism, the authors answer that for the dog it seems in the negative. The leukocytic infiltration of the framework of the lungs which occurs invariably in streptococcus pneumonia, and which is practically absent in the lesions caused by the virulent as well as by the non-virulent pneumococcus, is a strong enough feature to form a dividing line between the two forms of experimental pneumonia described.

30. **Bone and Joint Tuberculosis.**—In the course of an investigation into the etiology and pathology of bone and joint tubercle, a number of experiments were performed by Fraser with a view to establishing (1) the routes by which infection spread to the locomotory system, and (2) the factors which governed the localization of the lesion. His results may be summarized as follows: Local bone or joint tubercle is rarely the result of a generalized infection. To illustrate this fact guinea-pigs received known quantities of human tubercle bacilli by subcutaneous inoculation and by feeding.

The first series, ten in number, was infected with amounts varying from 1 to 2 mg. of dried bacilli. The inoculation was made subcutaneously, and six weeks later the animals were killed and examined. Special attention was paid to examination of the bones and joints, and in most instances the bones were submitted to microscopic examination. The necropsy revealed in each case the presence of a disseminated tuberculosis. In no instance was any lesion discovered in the bones or joints. Infection by ingestion was carried out by feeding four guinea-pigs for a period of three weeks on food adulterated with tubercle bacilli. The animals were permitted to live for six weeks and were then killed and examined. Necropsy revealed the presence of general tuberculosis, apparently primarily beginning as a mesenteric infection. Examination of the bones and joints yielded entirely negative results. These experiments illustrate the fact that infection of bones or joints is not a likely possibility in the general dissemination of tubercle. Next, the tibiae of seven guinea-pigs were inoculated. The bone was exposed from its inner or subcutaneous aspect. For about a third of the circumference the periosteum was separated from the underlying bone until an area of 1.9 cm. was exposed. In this area the medulla was opened by raising a tiny trap door of bone, and without infection of the soft parts a fine probe carrying a tiny plug of cotton wool infected with tubercle bacilli was introduced. The wound was then bathed with antiseptic lotion, and the trap door of bone and the raised periosteum were replaced. At the end of a varying period each animal was killed and examined. The infected bone was removed intact and submitted to microscopic examination. The examination revealed in every case, as was to be expected, a general bone tuberculosis. The examination of the infected bone showed that in four of the seven cases a definite tuberculous osteomyelitis had developed; in the remaining three cases microscopic examination afforded no sign of active tubercle; in one instance there existed what apparently was a healed tuberculous focus. There was no source of error in the original infection of the bone, but Fraser believes they were instances of true recovery from infection.

Next, two rabbits were infected with a bacillus of human strain, while two were infected with a bovine bacillus. When rabbit bones are directly infected with the human tubercle bacillus there results no local development of disease. When the bones are infected with the much more virulent bovine bacillus, the virulence of which had been previously demonstrated, a slight lesion appears, but it is circumscribed and retrogressive. It is interesting to note that the rabbits which were inoculated with bovine bacilli showed no evidence of general tuberculosis. The explanation apparently is that the cellular action is so intense as to prevent any general spread of the disease. These experiments were carried out in fully developed animals and the center of the shaft was the site of local infection. To reproduce more exactly the type of infection which occurs clinically, a series of experiments was performed in which young rabbits with growing epiphyses were used, and the bones were infected at what is considered the site of election of the disease; namely, the metaphysis. The experiments yielded negative results. In neither case was there any development of the disease, local or general.

The next question considered was the result of direct infection of the joint cavity. Rabbits were chosen for the experiments and both human and bovine bacilli were employed in individual instances. In striking contrast to the bones, the joints are readily infected with the tubercle bacillus. The degree of reaction which occurred was much more intense in the case of the bovine bacillus than in that of the human. Another series of experiments was performed in which a quantity of tubercle bacilli was introduced into the circulation by injection of a mesenteric vein. Uniformly the results were negative. Infection of the mesenteric veins necessarily produced tuberculous foci in the liver and lungs and occasionally in the overlying peritoneum, but in no instance was there any sign of infection of the bones or joints.

Next, a series of experiments was performed to demonstrate the possibility of hematogenic infection. In a total of six experiments a local infection developed in one instance, and this single positive result was indicated not by an active tubercle, but by a healing and retrogressive process. The value of these results lies in their demonstrating that a circulation of tubercle, a tuberculous septicemia, in fact, unaided by any predisposing factors, is unlikely in itself to produce a local tuberculous lesion of the bone or joint. Other experiments showed that it is possible to infect the joints of a limb by infection of the main blood-vessel with tubercle. The primary infection was of the joint, and any change which may have appeared in the neighboring bone was secondary to the synovial tubercle. This was demonstrated by subsequent microscopic examination. The infection had originated in that portion of the synovial membrane which lines more especially the reflection of the joint. Histologically the changes in the joint subsequent to infection were those of an acute synovial tubercle. In two cases of direct infection of the nutrient artery, the injection entering entirely the medulla, the result locally was negative. There was some evidence of general infection. The infected tibia showed a fatty change in the marrow, but no development of tuberculous tissue.

Journal of Ophthalmology and Oto-Laryngology, Chicago

February, VII, No. 2, pp. 35-68

31 Blood Changes in Sympathetic Ophthalmia. H. S. Gradle, Chicago.

32 Submucous Resection of Nasal Septum, with Report of 100 Cases. H. T. Aynesworth, Waco, Tex.

Laryngoscope, St. Louis

February, XXIII, No. 2, pp. 81-158

33 Modern History of Accessory Nasal Sinus Disease. J. Wright, New York.

34 Unusual Case of Osteoma of Superior Maxilla. M. D. Ritchie, Pittsburgh.

35 Early Home Treatment of Deaf Child. G. Hudson-Makuen, Philadelphia.

36 Inadequacy of Drainage Sometimes Obtained by Ordinary Myringotomy in Acute Otitis Media and Method of Overcoming Difficulty. R. Lewis, New York.

37 Case of Cavernous Sinus Thrombosis of Otitic Origin, with Recovery. H. R. Johnson, Fairmount, W. Va.

38 Nystagmus Produced by Galvanism of Individual Semicircular Canals. L. M. Hubby, New York.

39 Case of Fibro-Angioma of Tongue. D. MacFarlan, Philadelphia.

40 New Instruments. J. J. Sullivan, Scranton, Pa.

41 Probable Tumor of Lung Diagnosed by Upper Bronchoscopy. R. H. Johnston, Baltimore.

Maryland Medical Journal, Baltimore

March, LVI, No. 3, pp. 53-78

42 Some Endoscopic Methods. R. H. Johnston, Baltimore.
43 Present Status of Typhoid Vaccination in Maryland. F. W. Hachtel and H. W. Stoner, Baltimore.
44 Relation Physician Should Sustain to Our City Clinic. J. D. Blake, Baltimore.
45 Medicine To-Day. E. K. Tullidge, Baltimore.

Medical Record, New York

March 8, LXXXIII, No. 10, pp. 415-460

46 Scope of Disease. R. G. Eccles, Brooklyn.
47 Ulceromembranous Angina (Vincent's) and Its Treatment: with Report of Cases. C. C. Sutter, Rochester, N. Y.
48 Gonorrheal Ophthalmia Treated with Gonococcus Vaccines. W. K. Mittendorf, New York.
49 Thorium X in Treatment of Pernicious Anemia, with Report of Case. F. E. Park, Stoneham, Mass.
50 Rationale of Use of Adrenalin in Treatment of Asthma. C. P. McCord, Detroit, Mich.
51 Fourteen Cases of Alcoholism in Children Apparently Free from Morbid Heredity. A. Gordon, Philadelphia.
52 Necessity of Early Institutional Treatment in Mental and Nervous Diseases. F. H. Barnes, Stamford, Conn.

Military Surgeon, Washington, D. C.

February, XXXII, No. 2, pp. 135-219

53 *Gaseous Disinfection of Equipment in the Field. E. L. Munson, U. S. Army.
54 *Graduated Labor in Pulmonary Tuberculosis. S. R. C. Holcomb, U. S. Navy.
55 Kitchen Incinerator; Its Construction and Use. L. H. Reichelfelder, U. S. Army.
56 Recent Advances in Sanitation in U. S. Navy. A. W. Dunbar, U. S. Navy.
57 Sanitary Instruction of Soldiers in India. R. J. Blackham, Indian Army.
58 Syphilis: Especially in Regard to Its Communication by Drinking-Cups, Kissing, etc. W. P. McIntosh, Washington, D. C.
59 Case of Quinin Idiosyncrasy. G. M. Van Poole, U. S. Army.

53 and 54. Abstracted in THE JOURNAL, Oct. 26, 1912, p. 1564.

Mississippi Medical Monthly, Vicksburg

March, XVII, No. 11, pp. 211-230

60 La Grippe. J. J. Stevens, Hattiesburg.
61 Noma. T. F. Clay, Tutwiler.
62 Hypodermic Administration of Quinin: Its Indications and Contra-Indications. W. B. Harrison, Mattson.
63 Pellagra Induced in Monkey. W. A. Dearman, Long Beach.

New Orleans Medical and Surgical Journal

March, LXV, No. 9, pp. 635-696

64 *Abdominal Cesarean Section in Eclampsia and Central Placenta Praevia: Reports of Cases. E. M. Williams, Patterson, La.
65 Technic of Complete Hysterectomy. P. B. Salatich, New Orleans.
66 Davison's Operation for Undescended Testicle. H. B. Giessner, New Orleans.
67 *Essential Hematuria. A. Nelken, New Orleans.
68 Residual Urine in Old Men. S. P. Delaup, New Orleans.
69 Economic Value to Community of Recent Work Against Tuberculosis. J. G. Dempsey, New Orleans.
70 Treatment of Fractures of Neck of Femur. I. Cohn, New Orleans.

64 and 67. Abstracted in THE JOURNAL, May 18, 1912, pp. 1538 and 1539.

New York Medical Journal

March 8, XCVII, No. 10, pp. 477-528

71 Infant-Feeding. J. L. Morse, Boston.
72 Urethral and Periurethral Lithiasis. V. C. Pedersen, New York.
73 Scleroderma Insultatum. W. P. Cunningham, New York.
74 Indurative Headache. A. Maverick, San Antonio, Texas.
75 *Metamorphosis of White Blood-Corpuscles. T. Powell, Los Angeles.
76 Teething as Cause of Disease in Infancy. C. Herrman, New York.
77 History or Bloodletting. F. H. Garrison, Washington, D. C.
78 Postoperative Dilatation of Stomach. H. A. Duncan, Philadelphia.
79 Cultivation of Bacillus Typhosus from Spot in Lactic Typhoid Subject after Fastigium. P. G. Skillern, Philadelphia.
80 Infection of Genito-Urinary Tract by Micrococcus Catarrhalis. E. H. Stiter, Philadelphia.

75. **Metamorphosis of White Blood-Corpuscle.**—Powell regards the white blood-cell as a human parasite. He says that the various things that go to make the animal, vegetable and bacterial worlds have a definite and practically uniform contour and a no less definité manner and order of development, while that matchless deceiver, the white blood-corpuscle, stands almost alone in its morphologic versatility, in its indefinable shapelessness, and in its developmental irregularities, its only counterpart being the equally irregular, shapeless and indefinable thing which is called the ameba. The study of the morphology and life history of plants, animals and microorganisms enables us to describe with commendable accuracy the changes which will take place in succeeding generations of the same. But no such advantage can be had from the study of the so-called "primordial animal cell." For it utterly defies the highest powers and possibilities of human insight, prevision and description, not so much as a fairly accurate conception of the changes it is destined to undergo being at all possible. At best the history of this supposedly immortal thing can only be approximately described in advance of its coming by saying: The white blood-corpuscle will start out as a spheroidal, non-nuclear and non-motile mass; that at some future but indeterminable period it will appear as a mononuclear object of no certain but very uncertain configuration; that at a later but very uncertain moment of time it will appear as a grotesquely irregular motum corpusculum, or moving body, and that at a still later but very uncertain moment of time it will fall to pieces and disappear—all this without bestowing on its host, the body, so much as a single discoverable benefaction.

Old Dominion Journal of Medicine and Surgery, Richmond

February, XVI, No. 2, pp. 49-93

81 *Cheek Defect and Its Repair by Plastic Operation; Report of Case. J. S. Davis, Baltimore.

81. **Cheek Defect.**—Davis cites a case of large defect involving entire thickness of the right cheek, a typhoid complication, which was repaired with a double-faced skin and fat flap taken from the arm. A large pedunculated rectangular-shaped flap, 7.5 by 16 centimeters, made up of whole thickness skin, with its subcutaneous fat, was raised from the outer side of the right arm. The base of the flap was in the mid deltoid region. The flap was folded on itself and the distal end was sutured to the pedicle and underlying muscle. A few interrupted sutures were placed at intervals in the edges, thus bringing raw surface to raw surface, and forming a flap with a double thickness of fat within, and with whole thickness skin on front and back. A number of small stab-wounds were made in the flap to relieve congestion. The flap was then stretched by means of four sutures on a gauze-covered wire frame, to keep it flat, and to control the contraction. Dressed with moist salt gauze. The area from which the flap was raised was grafted immediately with Thiersch grafts from the thigh. Silver foil, rubberized mesh and dry gauze dressings.

Two weeks later as much as possible of the scar tissue was removed from the sides and upper portion of the defect. The flap on the arm was then opened across its free end, and its edges freshened. The arm was raised into position and the flap was sutured into the defect. Catgut was used in the mouth and through the fat and silk on the cheek. In this way the upper two-thirds of the defect was filled. The arm was then held by means of a plaster cast, which also included the chest, shoulder and head. The flap was dressed with moist salt gauze. Eleven days after implantation the circulation seemed well established from the cheek. The flap had healed nicely both inside and out. The cast was removed and under local anesthesia the pedicle was cut through close to the arm. Eleven days after amputation of the pedicle the scar tissue was dissected out from the lower third of the defect and, after trimming and freshening the edges of the flap, it was sutured in, so as to completely close the remainder of the opening.

Three months later the defect was entirely closed with a thick flap which was nearly level with the surrounding tissues. There was wonderful improvement in the appearance of the patient. The flap was in excellent condition. The skin was soft and pliable and of normal color. Within the mouth the skin was whitish and soft, and seemed to be gradually taking on the characteristics of the mucous membrane. It had united as satisfactorily to the surrounding tissues as had the external layer.

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Ophthalmic Record, Chicago

February, XXII, No. 2, pp. 59-116

82 Protection of Eyes of School Children. N. M. Black and F. A. Vaughn, Milwaukee.
83 Treatment of Pulsating Exophthalmos with Case Report. F. C. Bushtel, Denver.
84 Hole at Macula. C. A. Clapp, Baltimore.
85 U-Shaped Hemostatic Lid Clamp. M. D. Stevenson, Akron, O.
86 Capsule Forceps. H. S. Gradle, Chicago.

South Carolina Medical Association Journal, Seneca

February, IX, No. 2, pp. 33-55

87 Amputations, with Special Reference to Lower Extremities. C. M. Rees, Charleston.
88 Surgical Treatment of Stone in Bladder in Children. R. T. Ferguson, Gaffney.
89 Treatment of Some Patients with Disease in Posterior Urethra. O. V. Mikell, Columbia.
90 Pituitrin in Labor. J. J. Lindsay, Spartanburg.

Tennessee State Medical Association Journal, Nashville

February, V, No. 10, pp. 293-333

91 Tuberculous Peritonitis. M. Goltman, Memphis.
92 Tennessee's Needs in Legislation. S. E. Miller, Knoxville.
93 Appeal for Cooperation of Laity and Medical Profession in Public Health Matters. C. L. Goodrich, Fayetteville.

Vermont Medical Monthly, Burlington

February 15, XIX, No. 2, pp. 27-52

94 Blood-Pressure, Its Control by Drugs. D. Marvin, Vermont.
95 Diseases of Cervix Uteri. A. Randolph, Washington, D. C.
96 Lane's Kink and Jackson's Membrane. C. E. Chandler, Montpelier.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

February 22, 1, No. 2721, pp. 373-424

1 Hunterian Oration on Hunter and Lister and on Museum of Royal College of Surgeons of England. R. J. Godlee.
2 Aches and Pains Connected with Eye and Nose. C. E. Shaw.
3 Tumors of Orbit: Plea for Operation. W. Collins.
4 Hematoma of Left Orbit Treated by Modified Krönlein's Operation. J. M. Cotterill and G. Mackay.
5 *Influence of Septic Infection in Causation of Eye Disease. B. T. Lang.
6 *Six Cases of Hydrocele in Infants Treated by Operation. J. H. Nicoll.
7 *Occlusion of Inferior Vena Cava, as Result of Internal Trauma (Dissecting Varix?). S. G. Shattock.
8 Vaccine Therapy in Chronic Bronchitis. H. T. Gillett.
9 *Supraclavicular Anesthetization of Brachial Plexus. W. F. Nell and F. Crooks.

5. **Influence of Septic Infection in Causing Eye Disease.**—Many of the inflammatory lesions of the eye in Lang's opinion are infective and depend for their origin on some septic focus, from which the exciting substance must travel to the seat of the disease by the blood-stream. Whether the causative agent is bacterial or toxic is uncertain. On the one hand, attempts to grow organisms from the fluid of the anterior chamber in cases of acute non-suppurative iritis always fail; on the other hand, the anterior chamber is very like a joint cavity, and gonococci can be seen in and cultivated from the joint fluid in cases of acute gonococcal arthritis. Histologic demonstration of the bacteria in the inflamed tissues is out of the question because no eye is ever excised during the onset of the acute stage.

Septic foci occur in three situations: 1. Along the respiratoalimentary tract. 2. Along the genito-urinary tract. 3. On the skin or in a sinus leading from it. Cases illustrative of the infective influence of chronic inflammation are cited. Lang subjected 176 patients to careful analysis, which emboldens him to maintain the views here expressed that he holds that these eye conditions are often septic in origin and not due to anemia, idiopathic tendencies, rheumatism or the gouty diathesis.

6. **Hydrocele in Infants Treated by Operation.**—In the operation performed by Nicoll in these six cases a skin incision (1 to 1½ in.) was made just above the groin over the inguinal canal, and the spermatic cord exposed just below the ring. The testicle and hydrocele were pushed up into the wound, and the upper end of the hydrocele sac exposed by a few snips of the scissors. The exposed sac was then emptied by trocar and cannula. The collapsed sac with the testicle was then pulled out of the wound, and the sac dealt with—either by tearing out its internal serous lining, by complete excision, or by bisection and suture of its halves back to back behind the testicle. Replacement of the testicle in the scrotum and suture of the wound in the groin completed the operation.

7. **Occlusion of Inferior Vena Cava.**—Immediately after running a foot race Shattock's patient lay on the grass, and within a few seconds complained of pain in the lumbar spinal region. He was put to bed, where he remained for six months. Edema of the legs, and to a lesser degree of the abdomen and scrotum, supervened at once, and persisted for the period mentioned. While in bed, the superficial veins began within a few days to dilate, and this dilatation slowly progressed. During the rest of life the distended veins were supported by the systematic use of carefully adjusted elastic pants reaching as high as the thorax. Albuminuria appeared directly after the event, and persisted throughout life. Death occurred twenty-five years later. He was subject to attacks of phlebitis and thrombosis in the enlarged saphenous veins, these attacks being readily brought on, for example, by the pressure of a crease in the elastic pants.

Sept. 25, 1909, the patient noticed some tenderness and discoloration behind the right internal malleolus; this extended to the dorsum of the foot; on the 29th, the temperature was 100 F., and he had a slight rigor. The next day his throat became sore, and on October 1, the signs of well-marked tonsillitis appeared, the lesion on the foot having vanished. The throat became more painful, and the temperature kept up. On October 4, the right tonsil was freely incised under gas; not more than three or four drops of pus escaped. Death took place on the day following, and was attributed to tonsillitis and septicemia.

At the autopsy, although carried out within six hours after death, there was such a degree of generalized emphysema as to render a satisfactory examination of the viscera impossible. Description of the specimen: The preparation comprised the superior and inferior venae cavae, wanting their cardiac terminations. The right azygos vein is considerably dilated. Except for its highest part, the whole of the portion of the inferior cava preserved is converted into a flat impervious ribbon, which is most contracted and thinnest for a distance of 6.5 cm. (2½ in.) opposite and below the renal veins. A portion has been cut away from the front of the vessel below the veins last named, showing that its lumen is completely occluded. The common iliac veins and the portions of the external and internal preserved are likewise flattened and obliterated, though somewhat less reduced in size, owing to the presence of internal adherent coagulum. The tributaries and trunk of the left renal vein are pervious, though, as tested with the probe, the entrance of the latter into the cava is closed. The same is true of the trunk of the right renal. The right spermatic vein, as far as its entrance to the cava, is likewise pervious. From the left side of the lower part of the cava there projects the occluded end of one of the lumbar veins of the same side. The upper divided end of the inferior cava is pervious, though reduced in size. It was found during the dissection that the hepatic veins were unoccluded.

9. **Supraclavicular Anesthetization of Brachial Plexus.**—The operations performed by the authors under this form of anesthesia were: Amputation through forearm, amputation of fingers, reducing impacted Colles' fracture, setting fractures of forearm, suturing tendons and lacerations of arm, incising cellulitis of arm, sequestrotomy of humerus, reducing dislocation of shoulder, plating radius and ulna, wiring olecranon, moving stiff elbow, and scraping necrosed metacarpal. In forty cases they had only four failures; in the first three of these a general anesthesia was obtained at the second attempt. In four cases the anesthesia was light or incomplete; but was sufficient to allow of the operation being performed; in these cases a weak solution of the anesthetic was used. Thus in 80 per cent. of the cases the anesthesia was light or incomplete, but was sufficient to allow of the operation being performed; in these cases a weak solution of the anesthetic was used. Thus in 80 per cent.

of the cases the anesthesia was complete, in 10 per cent. it was a failure, and in the other 10 per cent. although the anesthesia was incomplete, it was sufficient for the operation.

Journal of Obstetrics and Gynecology of British Empire, London

January, I, XXIII, No. 1-64

10 Burton ("Dr. Slop"): His Forceps and His Foes. A. Doran.
11 *Duplication of Bladder, Vagina and Vulva, with Successive Full-Time Pregnancy and Labor in Each Uterus. J. E. Gemmell and A. M. Paterson.
12 Hebosteotomy. A. J. Wallace.

11. **Duplication of Pelvic Structures.**—The salient features of this case are: a single anus and rectum; duplication of vulva, urinary and genital ducts, bladder and uterus; wide separation of the pubic bones; and the absence of a true umbilicus. The distance between the anterior superior spines of the ilium was eleven inches. There was no symphysis pubis. On palpation in the groin, on each side, Poupart's ligament, pubic spine, pubic crest and separated pubic symphysis could be felt distinctly. The distance between the two pubic bones measured 3⅞ inches. The curve of the sacrum and coccyx and their relation to the spine of the ischium on the left side, formed an almost normal shape of the left half of the pelvis; whereas the right half was merely a large roomy basin. There was no mons veneris. The interval between the thighs formed a perineal space 4 inches in diameter. The vulvar area was roughly heart-shaped with the apex directed backward to the cleft between the nates. The anterior portions of this area, covered sparsely by hair, encroached on the area covering the pubic bones on each side of a bare area devoid of hair and sweat glands.

When the patient was placed in the pelvic position, with knees drawn up on the abdomen, and the soles of the feet resting on the bed, the distance between the folds of the groin was found to be 6½ inches; and the presence was noted of two separate laterally placed vulvae, with a single anus (behind the left vulva), and a natal cleft behind the anus. The vulvae were almost normal in size and form. Labia majora were present. The medial labium on each side was less prominent than the lateral labium; within each vulva were labia minora, clitoris, vestibule and the openings of urethra and vagina. The ostia vaginae readily admitted two fingers and were three inches apart. In 1910, when the patient was first seen, each vagina showed the remains of a hymen. The labia majora and clitoris were not so well formed on the right side as on the left. Behind the left vulva were the perineum and anus. Bimanual examination showed on each side, besides a normal vagina, a well-formed cervix and uterus, which could be moved freely, independently of one another. A single ovary could be felt at the outer side of each uterus. The urethrae were apparently normal; on passing a catheter six ounces of clear urine were drawn off by the left urethra. A catheter passed through the right urethra drew off four ounces of turbid urine containing pus.

In the area between and anterior to the two vulvae, opposite to the separated pubic bones, the following facts were observed. The area of skin was devoid of both hair and sweat glands. On palpation it was found to consist solely of thin skin covering a hole, beneath which abdominal viscera could be palpated. The margin of this vacuity in the abdominal wall presented a thickened clearly demarcated border, bounding a circular opening beneath the skin about 1½ inches in diameter. All round the opening the aponeurotic covering of the abdominal wall was thick and resistant, particularly behind it, where it formed a dense broad band stretching across between the pubic bones, in front of and between the vulvae. In relation to the anterior border of this space, and a little to the right of the middle line, the skin was drawn up into a puckered, somewhat stellate, raised cicatrix, about an inch in diameter. The authors suggest that this area comprises the umbilical area; that there has been no allantois or proper umbilical cord; that the fetal belly-wall was in contact with the placenta, and that at birth the orifice was ligatured and the thin skin drawn over it to cover it, and complete the body-wall. The stellate cicatrix represents a pseudo-umbilicus and the closure of the fetal body cavity at its junction with the placenta.

Journal of Tropical Medicine and Hygiene, London

February 15, XVI, No. 4, pp. 49-64

13 Indian Oropharyngeal Leishmaniasis. A. Castellani.
14 Identity of Certain Leishmaniases Based on Biologic Reactions. I. Bandi.
15 Case of Paramelitensis Fever. P. W. Bassett-Smith.

Lancet, London

February 22, I, No. 4669, pp. 507-582

16 The Hunter Museum and Lister. R. J. Godlee.
17 *Transmission to Monkeys of Virus Obtained from English Cases of Poliomyelitis. J. McIntosh and H. Turnbull.
18 Two Cases of Pancreatic Cyst. W. F. Cholmeley.
19 Two Cases of Pancreatic Cyst with Acute Symptoms. C. Frankau.
20 Large Renal Calculus Associated with Sarcoma of Kidney. D. Drew.
21 Case of Bence-Jones Proteinuria. J. Henderson.
22 Ptomain Producing Bacteria in Human Intestinal Flora. D. M. Bertrand and A. Berthelot.
23 Therapeutic Action of Splenic Extract. H. R. Harrower.

17. **Transmission of Poliomyelitis.**—This paper deals with the inoculation into monkeys of material from four cases of poliomyelitis which with one exception occurred in the London Hospital district. In every instance the monkeys were inoculated intradurally as well as intraperitoneally with emulsions of the cord. Pieces of the spinal cord and brain were on their removal from the body transferred to a bottle containing a 33 per cent. solution of glycerin in saline and were kept in the ice chamber till required. For the inoculation of a monkey about 1 gm. of cord was placed in a conical glass, cut into as small pieces as possible with a pair of scissors, pounded up with a glass rod, and finally rubbed up with about 6 c.c. of saline. The larger particles were allowed to settle, and then the emulsion was drawn into a syringe. In practice it was found better to use a 10 c.c. record syringe for the intraperitoneal injection, and a 0.5 c.c. syringe with a finer needle for the intradural inoculation. Under an anesthetic (ether) a small incision about ¼ inch long was made down to the periosteum just above the superciliary ridge and just outside the middle line. A small hole was then made with a drill (diameter 2 mm.), a fine needle introduced, and 0.5 c.c of the emulsion injected. At the same time 4 to 5 c.c. of the emulsion were injected into the peritoneum.

The clinical histories and pathologic reports of the cases from which the material for inoculation was obtained are detailed. The authors suggest that in sporadic cases the virus is feeble, and the occurrence of the disease is due to a hypersusceptibility of the individual attacked, while an epidemic only results when the virus has become exalted either by a series of passages through susceptible individuals or from some other cause unknown.

Annales de l'Institut Pasteur, Paris

January, XXVII, No. 1, pp. 1-96

24 Manganese in the Organs of Animals. G. Bertrand and F. Medigreceanu. See Editorial March 1, 1913, p. 674.
25 *Experimental Arteriosclerosis. (Recherches sur l'athérome aortique.) (Recherches sur la pathogénie des altérations artério-scléreuses.) Y. Manouelian.
26 Inhibiting Influence of Peptone on Coagulation. (Etude de l'immunité contre l'action anticoagulante de la peptone.) E. and M. Pozerski. To be continued.
27 Filariasis in Native Troops in the Senegal. (Etudes morphologiques sur les microfilaires à gaine—Mf. Bancroft et Mf. diurna.) H. Foley.
28 Staphylococci in Stools. I. Schiller.
29 Influence of Diet on Formation of Indol in Rabbits. D. M. Bertrand.
30 Toxic Action of Guinea-Pig Serum in Contact with Kaolin. S. Mutermilch.

25. **Experimental Arteriosclerosis.**—Manouelian found that the aorta showed lesions of arteriosclerosis after repeated injections of filtrates or emulsions of cultures of staphylococci in rabbits and monkeys. This occurred regularly in 84 per cent. of the rabbits and in five of the six monkeys. He found further that injury of the nerves was always followed by arteriosclerosis in the vessels innervated, the lesions closely resembling those of arteriosclerosis in man. He found in dogs a nerve fiber passing from the solar plexus and the secondary plexuses beyond to the abdominal aorta, on a level with the

origin of the left renal artery. He tore out this nerve fiber between two clamps or performed a similar operation on a nerve fiber passing to the pulmonary or femoral artery. The artery with which the nerve fiber in question was connected developed isolated lesions closely resembling those of arteriosclerosis in man. The data here presented suggest that the nervous system plays more of a part in the development of arteriosclerosis than has hitherto been realized.

Bulletin de l'Académie de Médecine, Paris

February 11, LXXVII, No. 6, pp. 85-108

31 Cultivation in Vitro of Spinal Ganglia. (Sur le rajeunissement des cultures de ganglions spinaux.) G. Marinesco and J. Minea.
32 *Ankylosis of the Jaw. (L'ankylose temporo-maxillaire étudiée au point de vue du diagnostic.) E. Kirmisson.
33 Bacteriologic Factor in Precipitation of Uric Acid. (Sur un mode de précipitation de l'acide urique.) V. Galippe.

32. To Determine Whether Ankylosis of the Jaw is Unilateral.—Kirmisson has often found it difficult to ascertain whether both sides were affected in case of pronounced ankylosis of the jaw. He has obtained useful information from the fact that the lower jaw can be moved sideways, when it is impossible to open the jaws, if the lesion is on one side only. If the ankylosis is bilateral, the patient will be unable to move the jaw in any direction. Another sign of unilateral ankylosis is that the cheek on the affected side seems more rounded than on the sound side. This paradoxical phenomenon is due to the fact that the bone support on the side of the ankylosis is more or less atrophied, so that the soft parts developing normally are squeezed into prominence, as it were. On the sound side, the bone being normal, the soft parts stretch normally over them and thus appear sunken in comparison with the bulging soft parts on the side of the ankylosis.

Lyon Médical, Lyons

February 9, XLV, No. 6, pp. 265-328

34 Meningococcus Septicemia and Meningitis in Young Man with Joint and Visceral Lesions from Inherited Syphilis. P. Courmont and J. Froment.

Presse Médicale, Paris

February 12, XXI, No. 13, pp. 121-128

35 Hemolytic Properties of Organ Extracts. C. Achard, C. Foix and H. Salin.

Revue de Chirurgie, Paris

February 10, XXXIII, No. 2, pp. 137-291

36 *Prevention of Injury of Nerve in Operating on the Elbow. (Des rapports de la branche motrice du nerf radial avec l'articulation radio-humérale, envisagés au point de vue de la chirurgie opératoire du coude.) O. Jacob.
37 *Fractures of the Ankle. (Sur la disjonction tibio-péronière et les fractures du cou-de-pied. Essai de classification.) Clermont.
38 *Participation of Thyroid in General Diseases. (Sur les altérations du corps thyroïde dans différents états expérimentaux et cliniques.) E. Martini.
39 Retrograde Invagination of the Intestine. A. Catz.

36. Prevention of Postoperative Paralysis of the Radial Nerve.—Jacob has encountered three cases of paralysis of the extensor and abductor muscles of the hand consecutive to an operation on the elbow. He gives an illustrated description of the exact anatomy of the region as observed in two cases, showing the best means for avoiding injury of the motor branch of the radial nerve in operating on the elbow.

37. Fracture of the Ankle.—Clermont strives to classify the various forms of fracture of the ankle with separation of the tibia and fibula, what he calls *disjonction tibio-péronière*. His study is accompanied by ten illustrations in the text and ten Roentgen-ray pictures.

38. Secondary Changes in the Thyroid.—Martini examined the thyroid in a number of dogs after removal of the adrenals, testicles, ovary or pancreas or after splenectomy or nephrectomy. None of these operations seemed to affect the structure or function of the thyroid as none of them led to the production of toxins to any appreciable extent. He has also made a careful study of the thyroid in ten persons who had died of pneumonia, ten others from typhoid, ten consumptives and ten cancer cadavers. He also reviews research in this line by others. The data presented confirm the part played by the thyroid as a protecting organ with a power to neutralize toxins. The reaction in the thyroid to the invasion by any infection varies in different cases. In acute diseases its reaction is characterized by excessive functioning which aims to neutralize the invading material circulating in the blood and facilitate its elimination. In chronic disease the continuous irritation from the toxins finally changes the structure and the secretion of the thyroid, modifying it more or less according to the intensity of the toxin production. The thyroid takes thus an active part in the defense of the organism, but if the struggle is long continued the thyroid becomes exhausted and shows signs of retrogression processes.

Semaine Médicale, Paris

February 12, XXXIII, No. 7, pp. 73-84

40 *Osteoma in Front of Hip-Joint; Five Cases. (Les ostéomes pré-coxaux.) F. Lejars.

40. Osteoma in the Thigh.—Lejars has encountered five cases of pathologic bone growth in front of the hip-joint. They deceptively simulated sarcomas but there was nothing malignant about the growths. They all had a history of traumatic injury at this point from two to four years before. After a period of insidious development, the tumor had suddenly increased in size and caused pain in moving the limb. In each of the cases he restored conditions approximately to normal by removing the exuberant bone growth with chisel and mallet. The resection should be as complete as possible to free the joint below and prevent new bone growth from relics left. He gives an illustrated description of the more typical cases; in one the patient was a man of 50 and the upper third of the thigh was twice the natural size. He had broken the femur at this point two years before but the progressive development of the tumor had only been noticed the last two months.

Archiv für klinische Chirurgie, Berlin

C, No. 3, pp. 597-938. Last indexed March 1, p. 702

41 *Operations on Posterior Cranial Fossa. (Zur Chirurgie der hinteren Schädelgrube.) O. Hildebrand.
42 Idiopathic Dilatation of the Esophagus. (Kasuistik und Therapie der Speiseröhre. Oesophagogastroanastomose.) H. Heyrovsky.
43 *Cancer of the Esophagus from the Standpoint of Thoracic Surgery of Human Beings. (Der Oesophaguskrebs vom Standpunkt der thorakalen Chirurgie.) Willy Meyer (New York).
44 *Multiple Progressive Ossifying Myositis. (Hyperplasia fascialis ossificans multiplex.) S. Goto.
45 *Fistulas and Cysts in the Neck. (Halsfisteln und Cysten.) R. Wenglowski.
46 Implantation of Renal Vein in Vena Cava in Case of Operative or Other Injury. (Ueber Neoimplantation der Vena cava, zugleich ein Beitrag zur Technik der Gefässanastomose End-zu-Seit.) E. Jeger and W. Israel.
47 Operative Treatment of Injury of Duodenum from Contusion. W. Röpke.

41. Operations on Posterior Cranial Fossa.—Hildebrand devotes 106 pages and four colored plates to the detailed description of his fifty-one operations of this kind and to the lessons learned therefrom. Twenty of the patients died during or soon after the operation, but in all but four of these the lesion had been found absolutely inoperable. Only twenty-four of the remaining thirty-one were really operable cases. Twenty-two patients survived for more than three months afterward. The benefit derived from the operation, even in the hopelessly doomed cases, was great. In a large number choked disk retrogressed, thus restoring normal vision where the atrophy of the optic nerve was not irreparable. This group of cases in which although the choked disk retrogressed yet vision was irreparably lost, teaches the imperative importance of operating early, before such changes become installed. As the diagnosis in the early stages is often dubious, an exploratory operation to render the diagnosis certain is the only means to save such patients from blindness at least and possibly from death. Hildebrand has long preached the necessity for early exploratory trephining on even suspicion of a lesion in the posterior cranial fossa. Even if the exploratory operation should occa-

sionally hasten by days or weeks the inevitable fatal outcome, this should not be weighed in the balance against the exploratory operation, as the patients are already great sufferers. On the other hand, the earlier the exploratory operation is done the less danger connected with it. In his six cases of serous meningitis great benefit was the invariable rule, and the patients are still living in good health or succumbed a few years later to intercurrent disease. The five patients with internal hydrocephalus all recovered and one is in good health five and a half years since, but is blind; another died five weeks after the operation from tuberculous meningitis. One of the five patients with cysts in the cerebellum died at the operation; the cyst communicated with the fourth ventricle. The others were cured. Of the five with solid cerebellar tumors, two are living in good health and two died at the operation. The tumor was not discovered in the fifth case and the patient died from its effects six months later.

43. **Cancer of the Esophagus.**—See THE JOURNAL, July 2 and July 9, 1910, pp. 46 and 164.

44. **Ossifying Myositis.**—Goto's study of the pathologic anatomy of the course of this affection in a clinical case described in detail confirms the assumption that this form of myositis is not of an inflammatory or neoplastic nature. It seems to be the result of some congenital but not hereditary defect in the differentiation of the connective-tissue elements. There is first hyperplasia of the connective tissue, then fibrous induration, and finally ossification. Trauma seems to afford a local predisposition but the local changes can develop without this. The article fills over 57 pages and has nineteen illustrations in the text.

45. **Fistulas and Cysts in the Neck.**—A bibliography of 396 articles on the subject concludes Wenglowski's long article of which the 104 pages devoted to it in this *Archiv* is only the last half. It is accompanied by thirty illustrations in the text.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXVI, No. 1, pp. 1-121. Last indexed February 22, p. 632

48 *Clinical Importance of Reaction to Tuberculin Salve; 500 Cases. (Ueber die klinische Bedeutung der Moroschen Tuberkulinreaktion—auf Grund von 500 eigenen Beobachtungen.) K. Dluski and S. Rudzki.

49 *Artificial Pneumothorax; Thirteen Cases; Necropsy Findings in Four. (Einige Erfahrungen mit künstlichem Pneumothorax.) A. A. H. van den Bergh and Others.

50 *Influence of Gestation on Pulmonary Tuberculosis. (Einfluss der Generationsvorgänge auf die Lungentuberkulose.) W. Köhne.

51 Research on the Local Tuberculin Reactions. (Einige Untersuchungen über die klinische Anwendbarkeit der lokalen Tuberkulinreaktionen.) K. Andersen.

48. **Tuberculin Salve Reaction.**—Dluski and Rudzki report the application of Moro's technic in 500 cases of tuberculosis and also on a large number of healthy controls. They followed Moro's directions with care, rubbing a piece of the salve about the size of a pea on the skin over the stomach below the ensiform appendix or near the nipple. The salve is made of 5 c.c. Old tuberculin and 5 gm. lanolin, and is put up in 2 gm. tubes. The reaction is specific, but a negative response was obtained in 33 per cent. of the cases of certain tuberculosis. The positive responses grow less numerous with increasing age. The test is more important for prognosis than for diagnosis, negative findings with certain tuberculosis being a very unfavorable sign. The more pronounced the reaction the better the prospects for recovery. The salve test is particularly useful for control of tuberculin treatment.

49. **Artificial Pneumothorax.**—The great danger with this procedure is said to be that some minute focus on the other side may be whipped up by it, and the tuberculous lesion may spread rapidly. This occurred in some of the cases reported; in two it was confirmed by necropsy. To date it seems impossible to determine beforehand which patients will derive great benefit from the compression of the tuberculous lung by this means and which patients will have their mild tuberculous process in the other lung whipped up to a rapidly fatal course. For the present, therefore, it seems necessary to restrict the application of the method to cases of serious pulmonary processes limited almost entirely to one lung and progressing under conservative measures.

50. **Influence of Gestation on Pulmonary Tuberculosis.**—Köhne's experience has been that when the tuberculous process has displayed a tendency to shrivel up, this tendency is generally enhanced by a pregnancy, and the latter may even inaugurate it. In comparatively few tuberculous women are the effects of a pregnancy disastrous. But he warns that tuberculous women should never be allowed to nurse their children, and that all pregnant tuberculous women should be given the benefit of sanatorium treatment. These conclusions are based on twenty-nine cases with a record of eighty-eight childbirths. In sixteen of the twenty-two cases in which the women were under constant medical care, the condition actually improved during and after the pregnancy, but in the five other cases an injurious influence was manifest. The tuberculosis was not of a mild form in any instance.

Berliner klinische Wochenschrift

February 17, I., No. 7, pp. 289-332

52 *Cancer Induced in Rats by Feeding with Parasites of Cockroaches. (Ueber eine durch Nematoden—Spiroptera sp. n.—hervorgerufene papillomatöse und carcinomatöse Geschwulstbildung im Magen der Ratte.) J. Fibiger.

53 Deforming Arthritis Result of Necrosis of Cartilage. (Wesen der Arthritis deformans.) G. Axhausen.

54 Examination of Stools for Ova. (Zur Fäcesuntersuchung auf Parasteneier.) F. Wolff.

55 *Therapeutic Artificial Pneumothorax. E. Aron.

56 Anaphylaxis to Gastric Juice. (Magensaftanaphylaxie.) E. Manoiloff.

57 Treatment of Ankylosis of the Ankle. (Zur Behandlung versteifter Fussgelenke.) E. Weiz.

58 Durable Bacteriologic Stain. (Ueber einen haltbaren Gramfarbstoff für Gonokokken-, Pilz- und Spirochätenfärbung.) E. Klausner.

59 Vaccine Therapy. A. Wolff-Eisner.

52. **Cancer Induced in Rats by Feeding with Parasites of Cockroaches.**—In 1907 Fibiger discovered a stomach lesion in certain rats and found in it nematodes about 1.6 cm. long by 0.25 mm. in diameter and also ova containing the embryos. The lesions had the appearance of a malignant growth. He found it later in eleven of 1,144 rats examined. Certain circumstances indicated an intermediate host, and his research led to the discovery that this host was the ordinary cockroach, the *Periplaneta americana* or *orientalis*. In another series of sixty-one rats from a large sugar refinery similar nematode worms were found in the stomachs of forty, and in eighteen of these there were morbid changes in the stomach lining and in half of these the lesions were in the form of tumors like those first discovered; in the others the lesions seemed to be the preliminary stages. His further research has apparently confirmed beyond question that the tumors were dependent on the presence of the nematodes and that the ova of these parasites came from the *Periplaneta americana*. He gives an illustrated description of the spontaneous and induced growths and the biology of the parasites. He succeeded in reproducing the cancer by feeding other rats with the intermediate host, the cockroach. The malignant growth is slow in developing and it is probable that a larger proportion of positive experimental results would have been obtained if the rats had not succumbed too soon to intercurrent diseases. He states that in at least two and probably three of the laboratory rats fed with cockroaches, metastases of the induced malignant epithelioma were found in other organs. He remarks that this is the first time any one has succeeded in inducing in healthy animals carcinoma with metastasis.

No parasites or ova were found in the metastases and hence the development of the metastases must be due to a capacity on the part of the epithelium cells of the stomach to develop further, independently, without the help of a parasite, in other organs. It is his impression that all the anatomic changes are the result of the action of the toxins produced by the nematodes. He refers to Borrel's suggestion that parasites, such as the demodex and nematodes, may transmit the unknown virus which produces cancer. He based this assumption on the frequent finding of such parasites in or near cancerous growths. Fibiger adds that his own research shows the results of others in a new light. What has been assumed to be a casual coin-

evidence—the presence of helminths in or near cancers—must now be regarded as more a causal factor. There are a number of cases on record of carcinoma in persons with chronic trichiniasis.

55. **Artificial Pneumothorax.**—Aron gives some tracings of the pressure in the pleural cavity before and after artificial pneumothorax to show that the untreated lung breathes the deeper the more completely the compressed lung is excluded from the work of respiration. His experience confirms the necessity for restricting pneumothorax therapy to cases of unilateral pulmonary tuberculosis, progressing in spite of all other measures. He warns that the insufflation must not be begun until certain that the needle is in the pleural cavity. Force should never be used, and a manometer is always necessary. As soon as the pressure in the pleura approaches the zero point, special caution is imperative.

Centralblatt für die Grenzgebiete der Med. u. Chirurgie, Jena

February, XVI, Nos. 2-3, pp. 37-42

60 *Present Status of Knowledge in Regard to the Secondary Sexual Characteristics. (Unser Wissen über die sekundären Geschlechtscharaktere.) R. Hofstätter.

60. **Secondary Sexual Characteristics.**—Hofstätter devotes over four hundred pages to his critical review of the literature on this subject, listing 2,324 articles in alphabetical sequence. The present status of our knowledge shows that we have not gone much beyond Darwin to date. Hofstätter discusses the relations between the internal secretions and the secondary sexual characters, the effects of castration on man, woman, plants and the lower animals, regeneration, transplantation, influencing of the sexual characteristics by breeding and by external factors, precocious and tardy maturity, pseudohermaphroditism, and the sexual instinct, etc.

Deutsche medizinische Wochenschrift, Berlin

February 13, XXXIX, No. 7, pp. 297-344

61 *Benefit from Roentgen Exposures of Tuberculous Focus. H. Iselin. To be continued.
62 Development of Adrenal Cortex. (Zur Entwicklung der Nebennierenrinde.) M. Landau.
63 *Serodiagnosis by Abderhalden Technic. (Weitere Untersuchungen—3 Liste—auf Grund des Abderhaldenschen Dialysierverfahrens.) A. Fauser.
64 Serodiagnosis of Syphilis. (Untersuchungen mit der v. Dungernschen Vereinfachung der Wa. R.) W. Drugg.
65 *Benzol in Leukemia. S. Wachtel.
66 Hernia of the Diaphragm. (Ueber Eventratio diaphragmatica.) K. Motzfeldt.
67 Firearm Wounds of the Abdomen. (Schussverletzungen des Bauches.) H. Schricker.
68 Sympathetic Nystagmus in Erysipelas. C. Hirsch.
69 Corrosion of Skin from Benzin. (Verätzungen durch Benzin.) E. Schrwald.
70 Proprietary Medicinal Articles and Their Substitutes in Contract Practice. (Die wurttembergischen Krankenkassenreverse über die pharmazeutischen Ersatzpräparate.) Rathenau.
71 Medical Impressions of America. (Reiseeindrücke aus amerikanischen Krankenhäusern.) H. Strauss.

61. **Reduction of Toxicity of Tuberculous Focus by Roentgen Exposures.**—Iselin's article is not completed in this number but he states that since the beginning of 1907 he has given Roentgen-ray exposures to 300 patients with glandular tuberculosis. The rapid reabsorption of the tuberculous glands frightened him at first, but experience soon showed that no injury resulted except in six cases, while the patients gained in weight as a rule. In eighty-one patients with bone or joint tuberculosis all gained in weight except fourteen. Fully 77 per cent. of his patients with surgical tuberculosis showed this surprising gain in weight. It demonstrated that the reabsorption of even an entire tuberculous process not only does not injure the body but proves actually beneficial. The gain in weight further shows that exposure of the focus seems to exert a favorable influence on the general condition and reenforces the defensive powers. He was not able to keep the records of the temperature as the patients were all outpatients. This fact renders the increase in weight much more significant than if they had been in a sanatorium or hospital; they simply continued their ordinary mode of life. One girl of 19 was given the roentgen exposures for a nodular tuberculous peritonitis without effusion; in three months she had gained 9 kg., about 20 pounds. One workman with a large process in the ilium gained nearly 18 pounds in the course of six months although he had kept at work all the time. One woman of 50 with an open process in both knees gained 7 pounds in the six weeks after a single exposure of each knee.

63. **Serodiagnosis in Mental Disease.**—Fauser adds thirty-three to his previous series of fifty-five cases of dementia praecox or other forms of mental disease in which he has applied Abderhalden's serologic tests. He urges others to apply the tests in mental affections as cooperation of large numbers may reveal principles of extreme importance for psychiatry, clearing up the problems of dementia praecox, etc. Besides the findings of pathologic anatomy, we now must record the findings of pathologic serology. The latter may soon overshadow in importance the former.

65. **Benzol in Leukemia.**—Wachtel has given benzol in two cases of leukemia. In the first, a severe myeloid leukemia, he was obliged to drop the benzol the third day as albumin appeared in the urine. The second patient was a woman of 38 and she improved remarkably under 3 gm. benzol daily. In the first two weeks there was not much change except that the temperature returned to normal and the general condition improved. But in the fourth week the leukocytes dropped from 102,000 to 37,000. During the first three weeks the mononuclears predominated, but after this the myelocytes became reduced in numbers while the polynuclears increased, the spleen returned to normal size and the patient felt so well that she resumed her ordinary life. The number of myelocytes is still high, however, showing that the leukemia itself has not been eradicated. Under the benzol the number of reds increased and also the hemoglobin percentage. The last examination, Jan. 5, 1913, four weeks after the close of the benzol course, showed 4,200,000 reds, 8,000 whites, 12 per cent. lymphocytes, 80 per cent. neutrophils and 2 per cent. each of eosinophils and neutrophil myelocytes, with 78 per cent. hemoglobin.

Medizinische Klinik, Berlin

February 9, IX, No. 6, pp. 201-240

72 *Lead-Poisoning and Spinal-Cord Disease. (Bleivergiftung und Rückenmarkskrankheiten.) H. Eichhorst.
73 *A New Heart Tonic with Action Like That of Digitalis of the Asclepiadaceae—Milkweed—Family. (Calotropis procera.) L. Lewin.
74 *Nodose Rheumatism. Hillebrecht.
75 *Early Diagnosis of Carcinoma of the Sigmoid Flexure and Ampulla of the Rectum. H. Friedrich.
76 *Drainage into Cellular Tissue Without Drains. (Dauerdrainage unter die Haut ohne Drains.) Eyler.
77 The Constitutional Predisposition. (Zur Frage des Constitutionsproblems.) J. Bartel.

72. **Spinal-Cord Disease in Lead-Poisoning.**—Eichhorst discusses a case of spastic spinal paralysis or lateral sclerosis in a house-painter who showed unmistakable signs of lead-poisoning. The spinal trouble seems to be the consequence of the chronic lead-poisoning, and he does not anticipate complete recovery. He has previously had two cases of multiple sclerosis of the brain and spinal cord for which lead-poisoning was probably responsible. He comments on the scanty literature on the relations between lead-poisoning and spinal cord disease, and urges general practitioners to make a special study of this subject to throw more light on it.

73. **Milk-Weed as a Stimulant for the Heart.**—Lewin has been studying for a number of years a plant of the milk-weed family which seems to act on the heart like digitalis. It is a tropical variety and has long had a reputation among the native tribes as a remedy for dysentery, asthma, leprosy, syphilis, etc., and as an arrow poison, etc. The evaporated residue of the milk injected into frogs starts peristalsis of the heart; after six minutes the heart stops in systole with the fatal dose.

74. **Nodose Rheumatism.**—Hillebrecht has been able to find only seventy-eight cases of this affection in children under 15 and thirty-seven in adults, but adds two cases to the list. The nodules develop late in an acute articular rheumatism or chorea; they are situated mostly on the tendons, aponeuroses

and scalp, are not tender, and they subside again soon or not until after several weeks or months. Salicylic medication never displays any efficacy in these cases, and although the lesions are locally harmless yet their presence renders the prognosis very much graver.

75. **Early Diagnosis of Cancer of the Rectum and Sigmoid Flexure.**—Friedrich states that in twenty-two cases of this kind the lesions were discovered during endoscopy, and they were in such an early stage in eight cases that seven patients in this group were permanently cured by excision. In the others the tumor was already palpable and the six patients who were given operative treatment all died in connection with the operation. Seven patients were permanently cured by the early diagnosis rendered possible by sigmoidoscopy. Of the fifteen others many might probably have been saved if endoscopy had been applied earlier. The general practitioner should insist on endoscopy in all cases of constipation developing in persons with previously normal bowel functioning, especially when associated with tenesmus, obstinate pains in the sacral region, blood and pus alone or with the stools, and hemorrhages outside of defecation. The assumption without further examination that blood from the anus comes from hemorrhoids, is an error on the part of the physician and may have the direst consequences for the patient.

76. **Permanent Drainage Without Drains.**—Evler's method was recently described in these columns. He merely makes an opening by separating muscles or boring through bone, thus permitting the pathologic effusion to ooze into the subcutaneous connective tissue. This not only drains away the fluid but has the effect of autoserotherapy. With ascites he separates the recti and draws peritoneum up over the edges of the hole thus made; the hole is only large enough to admit the tip of the finger. He usually taps the patient first. One patient thus treated two years ago has been in good health to date, and two cancer patients were immeasurably relieved. He drills a rib for pleural effusion. As the drill is removed, the fluid spurts from the hole. He has applied the method in two cases of effusion in a bursa, suturing the opened internal capsule to the external. Living tissue seems to be able to take care of a certain amount of bacteria and their toxins when the focus is drained in this way. In his three cases of effusion in a bursa the method proved so simple that none of the patients would stay in bed afterward. His only failures were in cases of effusion in the knee with deforming arthritis. The results were particularly striking in eight cases of a cystic tumor in tendon or fascia tissue on hand or foot.

Monatsschrift für Geburtshilfe und Gynäkologie, Berlin

February, XXXVII, No. 2, pp. 169-288

78 Organotherapy in Dysmenorrhea. G. Klein.
79 Oxydase Reaction in the Placenta. A. Wolff.
80 Diagnosis of Tubal Pregnancy. (Intakte Tubargravidität und wiederholter bimanueller Untersuchungen nebst Bemerkungen zur Diagnose der Tubargravidität.) J. Sonnenfeld.
81 *Autogenic Vaccines in Diagnosis and Treatment of Gonorrhea in the Female. (Zur spezifischen Diagnostik und Therapie der weiblichen Adnexgonorrhoe.) M. Neu.
82 Recurring Tubal Pregnancy. (Wiederholte Tubargravidität.) E. Puppel.
83 Operative Treatment of Incontinence of Urine. (Fall von hartnäckiger Harnincontinenz bei einer Frau, der durch die von mir vorgeschlagene Operationsmethode bei schweren Blasenscheidenfistein geheilt wurde.) N. Wolkowitsch.
84 *Disturbances at the Menopause. (Zur Frage der sogen. Ausfallserscheinungen.) Dubois.
85 J. Marion Sims. A. Martin.

81. **Specific Diagnosis and Treatment of Gonorrheal Salpingitis.**—Neu concludes from an extended trial of gonococcal vaccines in the gynecologic clinic at Heidelberg that no vaccine has yet been produced that is certain in diagnosis or effective in treatment of chronic gonorrhea in the female.

84. **Disturbances at the Menopause.**—Dubois says that the phenomena so frequently observed in women at the menopause, including congestion, sweating, "hot flashes," rapid pulse, headache, dizziness and emotional depression, are due in greater measure to psychic causes than to lack of ovarian secretion. He recommends, after exclusion of organic disease by a competent gynecologist, treatment by psychotherapeutic measures.

Münchener medizinische Wochenschrift

February 11, LX, No. 6, pp. 281-336

86 Metabolism of Matter and Energy in Infants. (Die Oekonomie im Stoff- und Kraftwechsel des Säuglings.) A. Schlossmann.
87 *Serodiagnosis of Pregnancy and Tumors in Genital Organs. (Ueber Serumfermentwirkungen bei Schwangeren und Tumorkranken.) P. Lindig.
88 Clinical Importance of Bacterial Anaphylatoxin. A. Hamm.
89 Heredity and Atheroma. (Erblichkeit des Atherom.) H. Schneider.
90 *Electrolysis in Treatment of Trigeminal Neuralgia. A. Rethi.
91 The Wassermann Reaction in Prophylaxis of Syphilis in General. (Notwendigkeit einer obligatorischen Einführung der Blutuntersuchung nach Wassermann bei der Kontrolle der Prostituierten und deren Bedeutung für die allgemeine Prophylaxe der Syphilis.) M. Müller.
92 Injection of Cocain into the Perineal Tissue as Head Emerges. (Schmerzlose Entbindungen.) A. Voll.
93 Electric Pocket Light Shows Transparency of Hydrocele as Aid in Diagnosis. A. Mayer.
94 National Insurance of Wage Earners in Russia. (Das neue russische Arbeiterversicherungsgesetz.) E. Franck.
95 The Mineral Mud at Homburg. (Indikationen und Wirkungen des Homburger Tonschlammes.) v. Noorden.

87. **Serodiagnosis of Pregnancy and Tumors in Genital Tract.**—Lindig has been applying Abderhalden's serodiagnostic methods with confirmatory results. It seems established beyond question now that a proteolytic ferment is present in the blood-serum of pregnant women and in women with tumors in the genital tract and possibly also with inflammatory processes. This ferment is able to digest the albumin in placenta, uterus and ovary tissue, in tissue from tumors of the genital organs and, to a lesser degree, muscle albumin.

90. **Electrolytic Treatment of Trigeminal Neuralgia.**—Rethi remarks that most of his patients with trigeminal neuralgia had sinusitis, but in a surprisingly large number of cases the neuralgia was traceable to malaria or syphilis; he expresses surprise that so few seem to think of the possibility of these latter with trigeminal neuralgia. He has often encountered patients with neuralgia rebellious to all other measures which promptly subsided under specific treatment for malaria or syphilis. He has found perineural injection of alcohol very useful but even this fails at times. In one such case he destroyed the nerve by electrolysis, using for the purpose a needle, such as is made for depilation, only that it is longer and is insulated to within 1 cm. of the tip. Half an hour beforehand he injects morphin, then after fifteen mintes he disinfects the field and injects a local anesthetic. Fifteen minutes later he introduces the cathode needle and turns on the current from 0 to 20 or 30 milliamperes. The sitting lasts for fifteen minutes. There was no headache thereafter and none of the three patients thus treated has had any return of the neuralgia. The action of electrolysis is more certain than that of alcohol injections because the nerve is entirely destroyed for a distance of from 1 to 1.5 cm.

Wiener klinische Wochenschrift, Vienna

February 13, XXVI, No. 7, pp. 241-280

96 Cholera at the Seat of War. (Massnahmen zur Bekämpfung der Cholera auf dem bulgarischen Kriegsschauplatz.) R. Kraus.
97 *Conditions Favoring Development of Tuberculous Meningitis. (Entstehungsbedingungen der Meningitis tuberculosa.) H. Koch.
98 Roentgenoscopy of Tuberculosis of the Hilus in Children. E. Sluka.
99 *Pathology of Lordotic Albuminuria. K. Dietl.
100 Has the Mammary Gland an Internal Secretion? (Zur Frage einer inneren Sekretion der Mamma.) J. Schiffmann and A. Vystavel.
101 Roentgenoscopy of the Large Intestine with Tumors in the Kidney Region. (Zur Kenntnis der radiologischen Befunde am Dickdarm bei Tumoren der Nierengegend.) A. Luger.

97. **Tuberculous Meningitis.**—Koch has been studying in 355 cases the conditions which favor the development of tuberculous meningitis. In fully a third there was a history of some acute infectious disease about two months before, fifty in the second month, twenty-five in the first and fifteen in the third month before the meningitis developed. In only two cases could trauma be incriminated, and in only two did there seem to be any connection with a preceding non-tuberculous pulmonary affection. In 45 per cent. of the cases the old tuberculous

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process consisted in merely the primary focus and regional lymph-nodes. The predominant influence of the primary infection for the development of tuberculous meningitis later is thus distinctly shown. With few exceptions the old tuberculous process was in the stage of full activity. The conclusion follows that tuberculous meningitis need not be feared unless the organism has been unable completely to conquer the old tuberculous processes. It follows further that the factors liable to bring on the outbreak of the meningitis are of moment only when there is at the same time an active tuberculous process somewhere in the body. The opportunity for massive infection and the age of the individual are important factors; the younger the organism the less its resisting power. With an active tuberculous focus, latent at the time, but ready at any moment to break down the ramparts within which it is enclosed, almost anything may start this, and then the infectious material spreads far and wide.

99. **Orthostatic Albuminuria.**—Dietl calls attention to the importance of vasomotor instability as a factor of equal moment with lordosis in the production of orthostatic albuminuria. The lordosis may cause stagnation in the renal vessels and thus induce albuminuria, but a sound vasomotor system is generally able to compensate for this. Consequently, when a person with orthostatic albuminuria has his vasomotor system toned up, the albuminuria may subside in spite of the persistence of the lordosis. This shows the importance of general tonic measures in treatment of orthostatic albuminuria.

Zentralblatt für Chirurgie, Leipsic

February 15, XL, No. 7, pp. 225-264

102 *Modified Technic for the Roux Gastro-Jejuno-Esophagostomy. O. Uffreduzzi and G. Giordano.
103 *Blocking the Sciatic Nerve. (Die Anästhesie des N. ischiadicus.) P. Babitzki.
104 Osteoplastic Fixation of Paralyzed Foot. (Eine neue Anwendung der freien Osteoplastik in der Fixation des paralytischen Fusses.) G. Frattin.

102. **Modification of the Roux Gastrojejuno-Esophagostomy.**—Uffreduzzi and Giordano have materially simplified the original technic, first making an ordinary Y anastomosis between the intestines outside of the chest and then between the stomach and intestine at the point where they are already in contact. The abdominal incision is on the left side below the costal arch. The pleura is then incised in the sixth or seventh interspace and the esophagus is resected from the cardia to above the stricture and the cardia is then buried. The loop of small intestine is then drawn up and joined to the esophagus. The anastomosis between the loop and stomach is then made outside of the chest as in the Roux technic. In their experiments on dogs the loop retained its vitality when not more than the lower third of the esophagus had been resected.

103. **Blocking the Sciatic Nerve.**—Babitzki states that the sciatic nerve can be palpated through the rectum and the anesthetic injected through the gluteal muscle under control of the finger in the rectum. The spine of the ischium is readily found and locates the nerve just above, after it leaves the shelter of the pyriform muscle. The nerve runs along between the trochanter major and the tuberosity of the ischium and the anesthetic can be injected directly on the nerve along its course. He found the anesthesia complete in from two to five minutes so that the patient did not feel his leg at all. It is just as if the leg did not exist. Babitzki has applied this technic in fifteen cases and with invariable success, even for amputation of the thigh and resection of veins.

Zentralblatt für Gynäkologie, Leipsic

February 15, XXXVII, No. 7, pp. 225-256

105 Prognosis of Puerperium Based on Vaginal Bacteriologic Findings. (Die bakteriologische Untersuchung des Vaginalsekretes Kreissender und seine prognostische Bedeutung für den Verlauf des Wochenbetts.) M. Traugott and M. Goldstrom.
106 *The Biologic Factor in Treatment of the Vagina. (Das biologische Moment bei der Behandlung der Vagina.) F. Kuhn.
107 *Serodiagnosis of Pregnancy. (Biologische Diagnose der Schwangerschaft.) T. Petri.
108 Unusual Symptoms with Pelvic Epidermoid Cyst. (Seltene klinische Erscheinungen einer Beckenblindgewebscyste.) A. Hörrmann.

106. **The Biologic Factors in Treatment of the Vagina.**—Kuhn expatiates on the importance of the acid reaction in the vaginal contents. When this acid reaction can be restored and maintained, morbid conditions right themselves. Nothing is better to accomplish this than sugar solution as he has repeatedly declared. It transforms the alkali-producing bacteria into acid-producers and thus restores the acid reaction. A similar phenomenon occurs with glycerin, while the glycerin has the further advantage that it transforms the vaginal mucosa so that it begins to secrete outward where before it was absorbing inwardly; the current is thus reversed. The secretions dilute the glycerin solution and this stimulates a lively growth of bacteria, but they are now acid-producers.

107. **Serodiagnosis of Pregnancy.**—Petri comments on the amazing reliability of Abderhalden's serologic method for determining the existence of pregnancy. It gives information in this line before any other method permits even a presumptive diagnosis. Even a few days after the embedding of the ovum it may be possible to determine the specific ferment and thus establish the gestation. In his experimental research he found a positive response in seven or eight hours after subcutaneous injection and in fifteen minutes after intravenous. The technic and the phenomena involved were discussed editorially in THE JOURNAL, Dec. 7, 1912, p. 2073.

Gazzetta degli Ospedali e delle Cliniche, Milan

February 2, XXXIV, No. 14, pp. 137-152

109 Identification by Veins on Hand. (Ancora sulla segnalazione personale.) A. Tamassia.

February 4, No. 15, pp. 153-160

110 Pectineal Hernia. (Ricerche anatomiche a proposito dell'ernia pettinea.) C. Mantelli.

February 6, No. 16, pp. 161-168

111 Application to Surgical Suturing of the Principle of the Binder in Reapers. (L'allacciatura meccanica in chirurgia.) F. Lastaria.

February 9, No. 17, pp. 169-184

112 Relations Between Pulse, Fever and Sweating. (Sul rapporto della frequenza del polso con la fase ascendente e discendente della febbre e con la sudorazione.) G. A. Pari and A. Ponzian.

February 11, No. 18, pp. 185-192

113 Pleural Effusion with Induced Pneumothorax. (Dei versamenti pleurici da pneumotorace.) A. Nardi.

Policlinico, Rome

February 2, XX, No. 5, pp. 153-188

114 Modified Technic for Anesthesia by Intratracheal Insufflation. (Contributo sperimentale alla narcosi per insufflazione intratracheale alla Meltzer-Auer, con apparecchio modificato.) A. D'Avack.

February, Medical Section No. 2, pp. 49-96

115 The Carotid Gland. (Studi sulla ghiandola carotidea di Luschka.) C. Frugoni.
116 Case of Secondary Pneumococcus Peritonitis with Abscess in Spleen. R. Foscarini.
117 Case of Leishman Anemia in Child in Region North of Naples. (Caso di anemia infantile da Leishmania proveniente della provincia di Caserta.) P. Mazzitelli.
118 *Comparative Merits of Tests for Albumin. (Studio analitico comparativo sui metodi clinici per la determinazione quantitativa dell'albumina nelle urine e nei liquidi patologici.) B. Maiolo.

118. **Tests for Albumin.**—Maiolo made parallel quantitative tests for albumin by the Esbach, Tsuchiya and Aufrecht technics and tabulates the findings in six cases. With the Esbach and Tsuchiya technics the findings are modified by the temperature and by the specific gravity of the fluids. The amount of precipitate is inversely proportional to the temperature. Of the three methods, that of Aufrecht is the least reliable for both urine and pathologic fluids. On the other hand, the Esbach and Tsuchiya technics give approximately the same findings with the urine but, with other fluids, Tsuchiya's phosphotungstic acid method is the closest to the actual facts.

Riforma Medica, Naples

January 4, XXIX, No. 1, pp. 1-28

119 *Operative Treatment of Peripheral Lesions which are Affecting the Centrdi Nervous System. G. Ruggi.

January 11, No. 2, pp. 29-56

120 *Induced Albuminuria as Test for Latent Nephritis. R. Scalia.

January 18, No. 3, pp. 57-84

121 Syphilitic Lesions in the Spine. (Caso di sifilide spinale. Indagini cliniche ed isto-pathologiche.) A. Evangelista. Commenced in No. 1.

January 25, No. 4, pp. 85-112

122 Modification of Glycogen in the Liver after Intravenous Injection of Cholin. (Le modificazioni del glicogene epatico in seguito ad iniezioni endovenose di colina.) G. Cavina.

123 *The General Reaction to the Skin Tuberculin Test. (La cutireazione del Pirquet. Importanza diagnostica della reazione generale.) L. Chiaravalloti. Commenced in No. 3.

124 *Chronic Enlargement of the Spleen with Cirrhosis of Liver and Ascites. (Splenomegalie chroniche spleno-thrombosiche.) I. Tansini and G. Morone. Commenced in No. 1.

February 1, No. 5, pp. 113-140

125 Cerebellar Syndrome in Malaria. G. Arena.

126 Abdominal Tumors in Children. A. Lorenzini.

119. **Influence of Peripheral Lesions on the Central Nervous System.**—Ruggi remarks that the clinical importance accorded of late to intestinal auto-intoxication harmonizes with Plato's conception that we each have three souls, and that one is located in the abdomen. Ruggi emphasizes the necessity for seeking or recognizing peripheral influences in the explanation of phenomena apparently of exclusively cerebral origin. Movable kidney in particular may induce psychic disturbances amounting almost to mania, but which disappear permanently when the kidney is restored to the normal place. The dragging on the nerves when organs are displaced downward readily explains the frequent nervous troubles even at a distance. He has always found more or less derangement of the internal genital organs in all his insane female patients with a sagging kidney, entailing auto-intoxication from stagnation of urine in the recurring retention. Variable vasomotor phenomena are also liable to accompany nephroptosis, demonstrating the disorder in the organs with an internal secretion. He has noticed the so-called "dead finger" in several patients with ptosis of the kidney. He warns that a fracture or other lesion after a trauma may cause intense pain although the true diagnosis may escape the medical attendant. In one such case the fracture of the neck of the femur had long escaped detection and the patient had been urged to exercise and go out of doors to help in throwing off her assumed hysteria. Ruggi adds that the injurious peripheral influences may emanate from more than one point. It is not enough to correct one and expect normal conditions to be restored throughout. He reports the case of a young woman who had suffered since puberty and was finally restored to health after fixation of both kidneys, removal of part of both ovaries, and finally hysterectomy after failure of conservative measures. No lesions of any severity were found in any of these organs, yet they were all below par to such an extent as to keep her in almost constant pain and nervous depression. In other cases he strove to modify the circulation and innervation of the internal genitals by resection of the abdominal sympathetic according to his method published in 1899. His experience with this has been invariably favorable. He thinks that resection of nerves or vessels may answer the purpose in place of ovariectomy in certain cases of ovarian trouble. Menstruation persists unmodified. The general practitioner should search carefully for somatic lesions in every case of nervous or mental disease.

120. **Induced Albuminuria as Test for Nephritis.**—Scalia made a subcutaneous injection of from 2 to 4 c.c. of pure white of egg in eighty-four patients with various chronic diseases whose urine was found previously free from albumin. In sixteen patients albuminuria followed the test injection. There was no trace of albuminuria at 1, 3 and 6 p. m. after the injection but at 9 p. m. there was 9.86 per cent. albumin and at midnight 6.28 per cent. The next day there were no further traces of albuminuria. One patient was a merchant of 59 with well compensated valvular insufficiency. In a few robust persons he repeated the harmless injection six days later.

123. **The General Reaction to the Skin Tuberculin Test.**—Chiaravalloti calls attention to the specific increase in the numbers of leukocytes which follows the application of Pirquet's skin tuberculin test. He states that this general reaction in the blood is extremely important from the diagnostic standpoint, as it practically never fails in case of active tuberculosis. It is thus a differential criterion of great utility. He examined the blood two hours after the principal meal, two hours after supper, and the next morning, fasting. Then the skin tuberculin test was applied at 2 p. m. and the blood examined again at the same hours as before. In a typical case the reds numbered 3,800,000 each time before the test and the leukocytes 17,200, 16,000, 15,800. After the test, at corresponding hours, the reds numbered 3,600,000, 3,600,000 and 3,800,00, and the leukocytes 22,000, 24,000 and 18,200. He calls this leukocytosis the general reaction to the Pirquet skin test and regards it as the expression of a general anaphylactic condition. This view conflicts with the general assumption that the skin reaction is a phenomenon of local anaphylaxis. The harmlessness, simplicity and convenience of the Pirquet technic are great advantages, but it frequently proves unreliable. Now, by supplementing it with examination of the blood, it enters on a new sphere of usefulness. He tabulates the findings in thirteen healthy persons, all giving a negative general reaction of this kind, as also five patients with syphilis, seventeen with various diseases and no history of tuberculosis, while it was constantly positive in fifty-one patients with pulmonary tuberculosis, in six with tuberculous peritonitis and in fourteen with a history of old tuberculosis in the family. There were further three patients with pulmonary tuberculosis, one with tuberculous peritonitis and two with tuberculous antecedents who had a negative general reaction although the local reaction was positive. These few contradictory findings merely show that no human tests are infallible. It is possible, he suggests, that when the tuberculous process is localized in the nervous system, as in one of these negative cases, that its defective functioning may explain the lack of phenomena of anaphylaxis. The special diagnostic value of this general reaction in the blood to the Pirquet test is that it occurs only in persons with active tuberculous processes.

124. **Banti's Disease.**—Tansini performed omentopexy plus splenectomy in 1901, in a case of Banti's disease in an advanced stage, with the prompt and permanent cure of the patient, a woman of 42. The syndrome was characterized principally by enlargement of the spleen and anemia, and it was evidently the result of a chronic thrombophlebitis of the splenic vein. The symptoms may suggest primary splenomegaly and exact differentiation is difficult, but splenectomy removes the cause and associated with omentopexy may cure even when there is already pronounced cirrhosis of the liver. The blood-findings after the splenectomy in these cases do not differ from those under other conditions.

Medicina Contemporanea, Lisbon

February 2, XXXI, No. 5, pp. 33-40

127 Acute Laryngitis. S. Teixeira.

Semana Medica, Buenos Aires

January 9, XX, No. 2, pp. 61-124

128 Etiology of Yellow Fever. (Notas de Clinica Hematologica.) P. J. Garcia.

129 Fracture of the Sternum. L. Bard.

130 The Universe Considered as a Single Organism. (La vida universal.) V. Delfino.

131 Systematization of Anatomic and Physiologic Evolution. S. V. de Castro.

132 Compulsory Declaration of Tuberculosis. V. Delfino.

133 Training for the Police in Medicolegal Matters in their Line of Work. (Las modernas adquisiciones de la policia cientifica. La escuela de policia de Rome. Sus funciones.) V. Delfino.

134 Hereditary Syphilis. (Concepto cientifico de la sifilis hereditaria.) B. G. Alvarez.

135 Familial Atrophy of the Optic Nerve. (Ectasia corneal, retinitis pigmentaria y atrofia optica congenitas en tres hermanas.) L. P. Marques.

Hygiea, Stockholm

January, LXXV, No. 1, pp. 1-111

136 Paratyphoid Epidemic Traced to Milk Supply; Sixty-Six Cases. (Epidemi, orsakad af bacill. paratyph. B. och sannolikt förmedlad genom mjölk.) W. Söderbaum.

137 Recent Research on Tuberculosis and Leprosy. H. Much.

138 Operative Treatment of Gastroptosis; Two Cases. (Tvenne fall af gastroptos behandlade med gastropexi.) E. S. Perman.

139 Spontaneous Rupture of the Spleen (Om spontan mjältruptur.) S. Johansson.

140 The Prognosis in Syphilis. K. Marcus.